American Lumberman
& Building Products Merchandiser

APR 22 1949

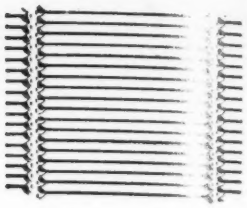
1949 DEALER PRODUCTS FILE

APRIL 9, 1949

Complete Master Index Page 4

Warp's VENETIAN SCREEN

ACTUAL SIZE

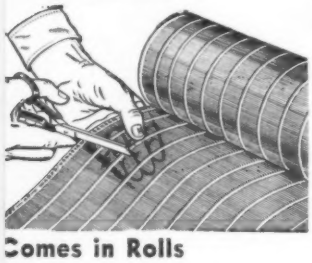


18 Louvers to inch

TURNS BACK SUN'S RAYS

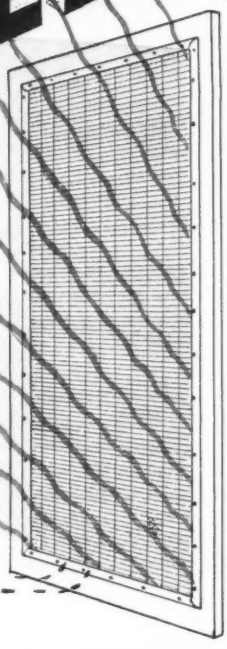
KEEPS ROOMS MUCH COOLER • • • KEEPS OUT INSECTS • • •

IMMEDIATE DELIVERY



Comes in Rolls

Mosquitoes or Flies Can Not Get Thru

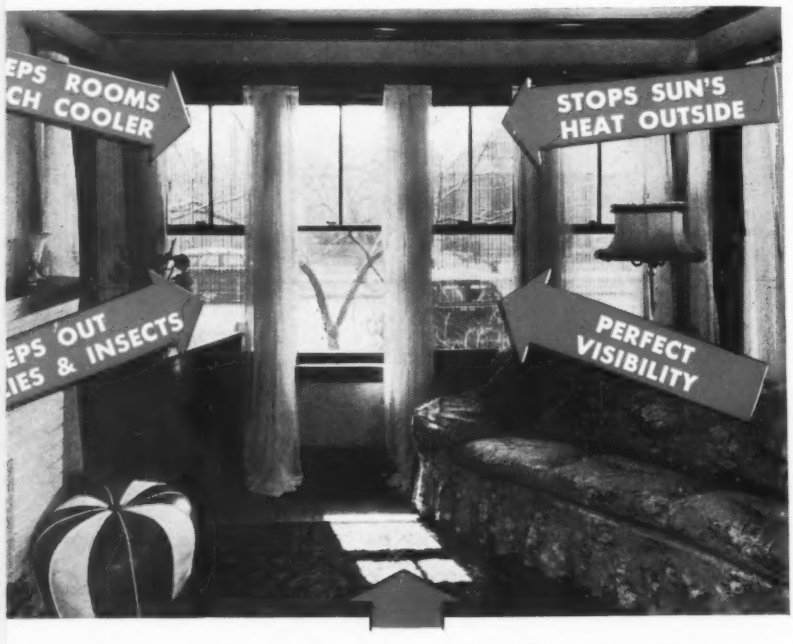


HEAT STOPPING - NEW FLY SCREEN

REPLACES SCREENS, AWNINGS and BLINDS

STOCK THIS FAST SUMMER SELLER

our customers will appreciate Warp's Venetian Screen. It is so easy to install — rings so much comfort to the home, and lasts so long that home owners quickly ecognize its value and utility. ***They buy — you profit!***



his Comparison Tells the Story—All Windows in Room Shown Above Except the enter Window are Screened with Warp's Venetian Screen. NOTE HOW SUN LAZES THRU THE UNSCREENED CENTER WINDOW TO HEAT UP ROOM ND FADE FURNITURE, DRAPES AND RUGS.

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for dealers

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Retail Price—39c sq. ft.

Dealer Price—26c sq. ft.

Widths—24, 26, 28, 30, 32, 36 inches

Lengths—25 x 50 lin. ft. rolls

Just cut Venetian Screen to size shears and tack on ordinary frames. last for years.

THE MODERN IDEA IN SCREENING THAT HOME OWNERS HAVE BEEN WAITING F

Lets in up to 20% more air than ordinary scre Deflects sun's heat before it enters the room. K room cooler — more comfortable. Helps pre fading of house furnishings. Complete visibilit restful to the eyes. Keeps out flies and mosqui Made of bronze — a lifetime metal.

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AMERICAN LUMBERMAN & BUILDING PRODUCTS MERCHANDISER

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Editorial . . . . .

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It is reported that Jack London laid the foundation for a great writing career by memorizing 20 words and their meaning every day.

This business of retailing building products is highly complex and detailed. A modern new house has 30,000 parts, and the house is just one of the products we provide for consumers!

On the opposite page is listed the 60 things the retail manager and salesman should know about the products you sell.

To learn all these things about the hundreds of products in a modern retail building products inventory would require years of study. With new products constantly coming on the market, it is a never-ending task.

And yet the more we know about what we sell and how to sell it, the better and more profitable job we will do.

The next best thing to having all the answers in mind is to know *where to get the needed information.*

It is the editorial policy of AL&BPM to provide the answers to these product questions in this Annual Dealer Products File—and to provide it in such a well organized and indexed form that retail personnel can readily find the answers that they do not already know.

Furthermore, the ambitious salesman can spend a few minutes every day boning-up on vital selling points that will improve his efficiency and competence.

Every page of this book contains scores of selling facts. The advertising, as well as the editorial pages are designed to be informative as well as directive.

The reader should take sufficient time to go through this book, page by page, checking consumer benefits, new technical items and other helpful selling material.

The objective of this first reading should be to get an overall picture of the information available and where to find the answer to consumer questions when you need them.

Then this book should be kept where it is instantly available to all employes for hour by hour and day by day use throughout the year.

A Pledge for Service: Where you cannot find an answer to a product question in this book, and the information is not readily available to you from your supplier's salesmen, write AL&BPM and *we pledge to get the data for you if it is obtainable.*

In this manner we will work together to make this book an increasingly valuable tool every year that it is published.

Bert Hood

EDITOR.

For Creative Selling--

The Sixty Things the Dealer and His Salesmen Should Know About the Products They Sell

The three vital ingredients of successful retail selling—*competence, enthusiasm* and *efficiency*—are fundamentally based on *adequate product knowledge.*

Here is an index of the things a retail manager and his sales people should know about each item they merchandise.

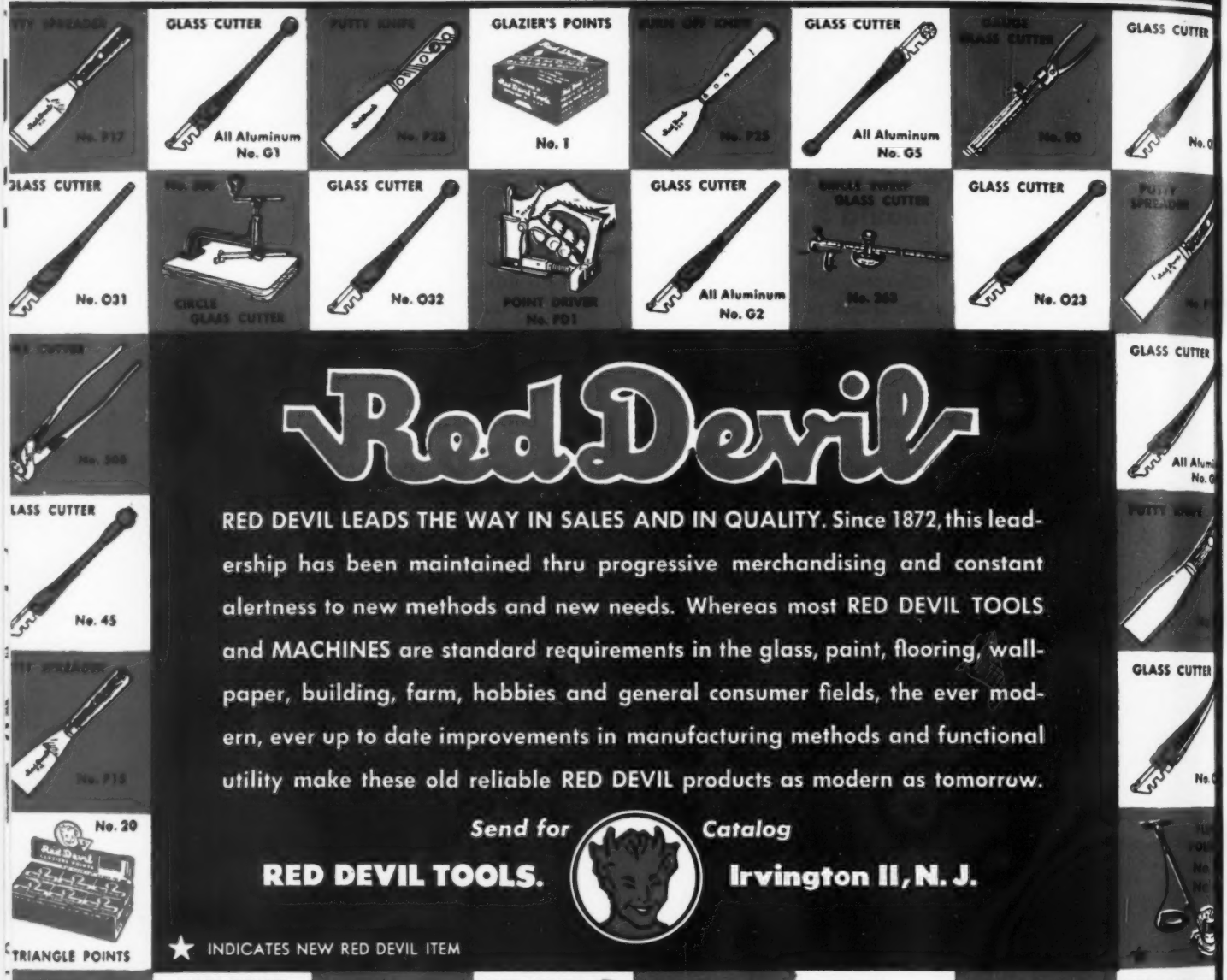
What retail management should know:

1. The profit opportunity in selling it.
2. The different consumer uses for it.
3. The kinds (types) of consumers who buy it.
4. How each class of consumer uses it.
5. The overall consumption potential in his market.
6. The potential sale to each type of consumer. (User.)
7. The knowledge about the line that a sales manager must have to intelligently and aggressively merchandise, sell and service all types of consumers.
8. Suggested dealer inventory and turnover to be expected and how to control them.
9. How to store, handle and deliver the product.
10. Necessary service after the sale.
11. The 38 things the retail salesman should know about the product.
12. What are the costs of selling, handling and delivery.
13. What kind of a mark-up should be had to earn a good profit.
14. How to organize a department embracing the product line.
15. The what, where, when, how and how much of dealer advertising of the line.
16. How to train and supervise salesmen to sell it.
17. Techniques for seasonal drives and ways to increase volume.
18. How to organize counter, window and store displays.
19. How to supervise the installation and application of the products assuring good, and preventing faulty, workmanship.
20. What tools and accessories are needed to merchandise the product.
21. The details of cooperation and support the manufacturer and his wholesalers will give him and his sales persons in merchandising.
22. Case histories of other dealers making an exceptional success with the product line.

What the retail salesman should know:

1. The product names and species.
2. The consumer names for the same product.
3. What the product is called when construction labor is applied to it.
4. How the product is made.
5. What it is made of.
6. Sizes—colors—shapes—grades.
7. How the consumer uses the product.
8. How to determine the best product for each consumer use.
9. What are the best colors, sizes and styles for each consumer use.
10. Different uses for the same product by varied kinds of customers.
11. Varied products for each consumer use.
12. The advantages and disadvantages of varied products for each use.
13. Reasons why consumers buy each product.
14. What are its consumer benefits and best selling points?
15. What do buyers lose or suffer by not having the product?
16. What do buyers lose or suffer by buying something of lesser quality?
17. What questions do consumers ask about each product and how are they answered?
18. How are they assembled, applied or constructed?
19. What types of mechanics are needed to apply them?
20. How to measure and satisfy consumers needs for each product.
21. The accessories necessary to make a complete job.
22. The quality needed for each consumer use.
23. What quantities to use for each consumer purpose.
24. What related items can be used and sold with each product.
25. What are the best ways to demonstrate the product and to use samples and displays?
26. What objections do consumers raise against buying and how can they be answered?
27. What technical information is available about it and where can it be secured?
28. What sales literature is available about it and how should each piece be used?
29. What sales helps are supplied by manufacturers and wholesalers for each product?
30. The limitations of each product and what can go wrong with it.
31. What features does it have no competitor can duplicate?
32. Wherein is it superior to "similar" products?
33. How big a local market for it—and what is the salesman's individual opportunity?
34. How to take off a product list from a blue print.
35. How to survey a property for its various product needs.
36. How to estimate the package selling price.
37. The selling prices (with cash and monthly payment basis) for each item, both as material only and as a consumer package unit.
38. The tools used in supplying and servicing each product and how to sell them.

Advertisers have been urged, and editorial personnel instructed, to provide the answers to these needs in building the pages of this book.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No. EF1

Harborite

The Superior Multiple Re-Use

CONCRETE FORM PANEL

HARBOR PLYWOOD CORPORATION • Administrative Offices, Hoquiam, Washington

Harborite

Engineered to Deliver

LOWEST COST-*PER FOOT-PER USE*

HARBORITE form panels are made by hot press bonding of phenolic type resin impregnated overlays to core-body of genuine SUPER-Harbord exterior type plywood. Core-body has been improved with face veneers of superior fir stock. The core-body panels are sanded before receiving overlays. All veneers and overlays are bonded with phenolic type resin. Thickness tolerance of finished panels 1/64".

1. Surfaces are hard, check-free, durable.
2. Texture is tough semi-kraft with affinity for oil or special form finishes.
3. Color is reddish-brown which does not bleed or discolor concrete.
4. Re-use salvage is high. Excellent re-use records are reported by concrete specialists.
5. Imparts desirable surface to concrete.

How to Use *Harborite* PLASTIC-FACED PLYWOOD PANELS for CONCRETE FORMS

THICKNESS TO USE

Here are simple tables for loadings of 5/8" and 3/4" thickness Douglas fir plywood relating to stud and wale spacings. They have been found practical for plywood and to have an extra safety margin for Harborite:

MAXIMUM ALLOWABLE LOAD IN POUNDS PER SQ. FT. ON 5-PLY DOUGLAS FIR PLYWOOD FOR DEFLECTIONS NOT EXCEEDING SPAN/270

Thickness of Plywood	CLEAR SPAN			
	12"	16"	20"	24"
5/8"	600	430	280	185
3/4"	650	500	360	260

MAXIMUM SPACING OF WALES FOR ROUGH AND DRESSED STUDS WITH 5/8 OR 3/4-IN. 5-PLY PLYWOOD SHEATHING*

Nominal Size of Studs Rough	Spacing of Wales Inches	Nominal Size of Studs S4S	Spacing of Wales Inches
2x4	38	2x4	28
2x6	58	2x6	44
2x8	60	2x8	60
3x6	60	3x6	60
3x8	60	3x8	60

*For stud spacing see table at left.

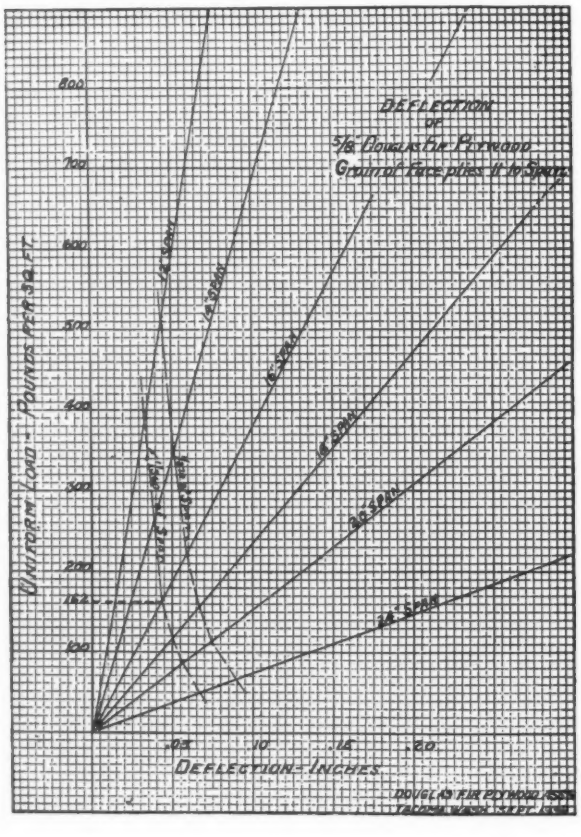
STANDARD SIZES
HARBORITE CONCRETE FORM PANELS

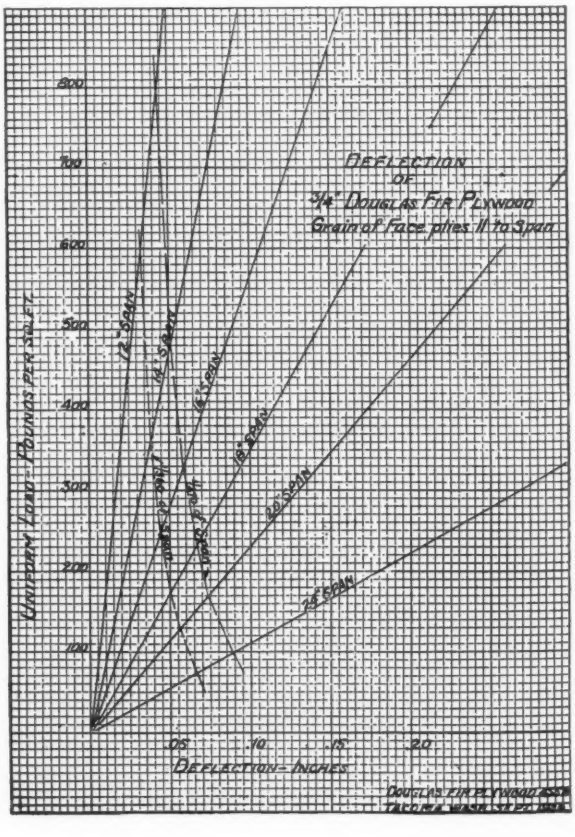
Width	Length	Thickness
36" up to 48"	96" up to 144"	1/4" to 1-3/16"

Although Harborite is stiffer than sanded Douglas fir plywood of the same thickness, it is the usual practice to specify the same thickness of Harborite for given form loadings and frame spacings as if plywood were to be used. Laboratory tests and computations show Harborite to be about the same stiffness of comparable unsanded plywood.

Reproduced here for the use of engineers are deflection charts for 5/8" and 3/4" thicknesses of plywood, the popular thicknesses for concrete form work. These charts were prepared by the Douglas Fir Plywood Association.

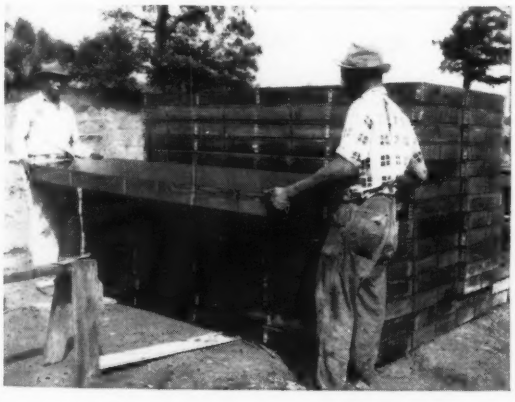
The charts show the deflections of Douglas fir plywood when the grain of the face plies is parallel to the span, i.e., when panels are placed lengthwise across the supports. When panels are placed parallel to the supports, the loads causing any given deflection will be smaller than shown on the charts, as follows: For 5/8-inch thickness, use 50% of load on chart; for 3/4-inch thickness, use 75% of load on chart; for any given span and allowable deflection.


DEFLECTION OF 5/8" DOUGLAS FIR PLYWOOD Grain of face plies ⊥ to Span
UNIFORM LOAD - POUNDS PER SQ. FT.
DEFLECTION - INCHES
12" SPAN
16" SPAN
20" SPAN
24" SPAN
DOUGLAS FIR PLYWOOD ASSN.


DEFLECTION OF 3/4" DOUGLAS FIR PLYWOOD Grain of Face plies ⊥ to Span
UNIFORM LOAD - POUNDS PER SQ. FT.
DEFLECTION - INCHES
12" SPAN
16" SPAN
20" SPAN
24" SPAN
DOUGLAS FIR PLYWOOD ASSN.

Workmen are cleaning the edges of the panel sections with a scraper, brushing the surfaces with a wire brush, using a burlap sack to wipe the faces clean prior to oiling. Junclas Construction Company, Cincinnati, contractors; William Cordes, Superintendent.

Workmen are re-oiling freshly-cleaned Harborite panel sections, stacking them for re-use. Number 100 pale oil is being used. The panel is thoroughly coated but not flooded.



Colonial Village Housing Project, Cincinnati. Oiled panel sections are stacked ready for re-use. Symons Clamp and Mfg. Company fabricated the sections.

CARE OF HARBORITE ON THE JOB

Harborite is a quality material and should be carefully handled. When received on the job it should be piled on level foundations with adequate supports and protected from the elements and traffic abuse. After stripping, nails should be drawn, panels thoroughly cleaned with a stiff broom and wire brush, and edges scraped in a way so as not to chafe the overlay. After loosening any concrete adhering to the panels, wipe clean with a burlap pad. Stack cleaned panels on level foundations adequately supported and protected from the elements. Avoid loose particles of concrete between panels that may mar overlay.

OILING

Panel faces and edges should be thoroughly oiled. A calcimine brush gives good spread. GIVE THOROUGH COATING OF OIL. When ready for pour, the panel faces should feel greasy to touch but have no excess oil to drip or stain the concrete. The Harborite overlay does not immediately absorb the oil like plywood or wood. Absorption of oil coating should be allowed a moment or two before removing excess oil. If after oiling the panels are allowed to set so long before using that film has been absorbed or panels are scuffed or abraded from handling, additional oiling or spot oiling is desirable. Concrete form oil specifications vary slightly in different regions. For example, the following A.P.I. specifications are typical:

	Gravity	Flash	Fire	Pour Point	Color	Viscosity at 100° F.
Gen. Pet. Corp. Calif. #100 Pale	22.5	305	345	—20°	2	100.0
Gen. Pet. Corp. S/V Ambrex Oil D	31.4	350	400	—25°	1.5	100.0
Standard of Calif. Base #100 Pale	21.5-25.0	315	350	—25°	1.2-2.0	100.0
Texas Co. Corvus Oil	28.0-32.0	320	365	—25°	1.5	75.0
Union Oil Co. Red Line #100 Oil	25.8	325	360	—35°	2	104.0

Other brands with approximate specifications should prove satisfactory.

SEALERS AND LACQUERS

Sealers and lacquers especially formulated for concrete form panels are coming into use. It is reported that some of these materials have proven eminently satisfactory. Some of these finishes have been found practical to be applied at the mill under controlled operations. Manufacturers of them report that they are suitable for field applications strictly under the directions as supplied by the manufacturers. Reports of performance of these materials vary. The manufacturers of Harborite will offer current information on reports from the field as progress and experience become general.

SAWING

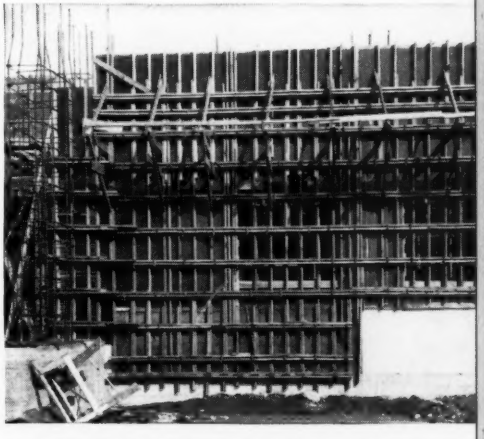
Harborite should be sawed or machined similar to plywood. Tight joints require straight and square edges of panels used. Careless sawing chips or tears the face veneer of plywood and likewise does a poor job on Harborite, resulting in leaky joints. Slack bearings or a loose arbor will cause saw blade to vibrate and mar the edges being sawed. Hollow-ground, medium-set blade with side-edges of teeth lightly stoned is desirable with 10-inch or larger diameter. Feed panels slowly through the blade with the table adjusted so the saw protrudes approximately one-half inch.

NAILING

Casing nails are preferred to common nails. Nailheads should not be driven below the surface of the overlay without nail set. Avoid bruising the overlay.

STRIPPING

Care should be exercised in stripping forms. Use thin wood shims to loosen where necessary. Avoid use of wrecking bar or hammer claws on Harborite faces. Lower panels carefully, avoiding damage to corners and edges. Avoid scuffing panels such as sliding over uncleaned panels or against nails, reinforcing rods and the like. Usually, freshly stripped panels contain considerable moisture and accordingly should not be stacked in strong sunshine. Sunshine can develop warp. MORE FORM MATERIAL IS DESTROYED BY ABUSE THAN BY SERVICE AS FORMS. CAREFUL HANDLING OF MATERIALS PAYS DIVIDENDS.



Harborite forms being used in school and gymnasium job, San Leandro, California. Swinerton & Walberg Company, San Francisco, contractors.

Edison Park Housing Project, South Bend, Indiana. Pouring a typical basement form. These Harborite form sections have been re-used 61 times. Homer Short, Superintendent; Reed Construction Company, Mishawaka, Indiana, contractors; expects to obtain additional 60 re-uses.

RE-USES

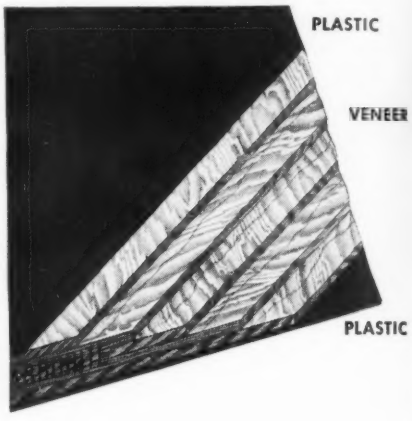
Harborite will give many re-uses as concrete form material and in direct ratio to the care in handling. Several score re-uses are not uncommon.

MISCELLANEOUS

When pouring, avoid chafing the tops of the forms with buggy edges, tools, or from the chutes of bulk carriers. A simple shield to protect the form edges is easily devised from scrap materials. When spading or agitating, avoid abrading the panel faces. All good concrete forms have tight and true joints to avoid leakage, consequent dilution of cement, incidental fins and consequent honing. Joints or damaged areas may be calked or leveled with a mixture of equal parts of Portland cement and tallow. Larger areas may be sprackled with plaster of Paris, which should receive one or two coats of shellac, then be oiled. It is desirable to saw one or two kerfs in the back of thick rustication strips to allow for the expansion of the wood when wet and to ease subsequent stripping. Rustication strips may be nailed with double-head nails from the back of the face of the form so that when the concrete is set the double-head nails may be easily withdrawn. Panels are first stripped and rustication strips allowed to thoroughly dry and shrink away before removing.

Technique for handling functional or ornamental moulds is the same as for plywood.

HARBORITE PLASTIC-FACED PLYWOOD



The overlay on Harborite is engineered with the amount of resin content controlled so as to obtain the degree of hardness, abrasion resistance and absorption most desirable for concrete form service. It is the lowest cost-per-foot-per-use concrete form panel made.

LOOK TO HARBOR FOR QUALITY BUILDING MATERIALS

SUPER-Harbord
EXTERIOR-TYPE DOUGLAS FIR PLYWOOD
The original phenol-type resin bonded panel

Harbord
INTERIOR-TYPE DOUGLAS FIR PLYWOOD
Improved with 10-cycle adhesive

SUPER-Harbord Giant
LARGE SIZE PLYWOOD PANELS
Made with 1 to 12 ratio scarf-joint

Harwood
FIR • PINE • HEMLOCK • LUMBER
Manufactured to meet highest standards, grade for grade

HARMOULD
PONDEROSA PINE AND FIR MOULDINGS
Precision machined dry stock in standard or special patterns

Eubank QUALITY PRODUCT
SWIVEL-TYPE CABINET IRONING BOARD
Board swings through wide arc for flexibility in use

HARBORD
ENTRANCE AND INTERIOR DOORS
Made in accordance with U. S. Commercial Standards and inspected by Fir Door Institute

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HARBOR PLYWOOD CORPORATION • Mills at Hoquiam, Washington and Riddle, Oregon

Section 1

LUMBER PLYWOOD RELATED ITEMS

WHILE THE PRESENT DAY building materials' dealer handles a wide variety of construction products, and has adapted his operations to store, handle, and sell them all, lumber is still of primary consideration to him.

In the light construction industry, lumber and lumber products form the major structural material for homes, farm buildings and similar buildings. To supply these requirements the modern dealer is called upon to stock a substantial inventory of various species, sizes, and grades.

From an engineering standpoint, more is known about the performance abilities of lumber than ever before. With chemistry making a valuable contribution, has come lumber that is practically impervious to fire, rot, and pests; and new types of glues that permit the manufacture of wood products that are more durable than ever before, and suitable for an ever widening field of uses.

In the forests too, scientific logging methods have placed lumber as our nation's Number 1 crop rather than an exhaustible natural resource, and we are rapidly approaching the point where lumber growth can equal production, no matter how great may be the demand.

Recent developments, however, have proved that lumber conservation practices are not confined entirely to logging. Savings in construction methods and practices may also contribute substantially, resulting in more economical housing.

These conservation measures are vital to the lumber industry today. Always a plentiful and comparatively inexpensive material, not much attention was given to ways and means of conserving it. It has been said that one-third of a tree was left in the forest, one-third was left at the sawmill, and one-third was produced as commercial lumber. Of this latter one-third, an untold quantity was trimmed off and wasted in the construction of the building into which it was incorporated.

Because lumber has been plentiful and cheap, the construction industry has insisted upon only the top grades. The industry has always complied, and this fact has led to a considerable amount of the waste mentioned above.

Now, however, engineering tests have proved that the so-termed lower grades have many construction applications; and in these applications have performance qualities equally as good as the higher grades.

Recent studies have also proved that there are numerous house, farm building, and other small building components that are cut more economically from short lengths. Precutting and preassembly methods, now becoming important factors in the light construction industry, make the use of short lengths even more practical.

These points are brought up because they have a vital bearing on a serious problem in the lumber industry today.

Since the war, the extremely heavy demands for lumber have been confined to the higher grades. Consequently, a huge quantity of lower grade lumber has been produced into commercial lumber for which there has been no demand. This is the lumber that has proved itself capable of entirely satisfactory service in a number of construction applications.

If full utilization of forest products is to be achieved, and if the cost of lumber in a structure is to be reduced, it will be necessary for both lumbermen and builders to adjust their long established ideas in the light of these developments.

Steps are being taken to modify existing restrictive codes to permit the use of the most satisfactory grade of lumber for each part of a building. Architects and builders are being educated to know the results of the studies that have been made concerning which grades are most suitable so they can take full advantage of it in their designing and specifications.

The success of this program will insure maximum utilization of lumber as a building material, and will lead to even wider varsatility of wood products in the construction field.

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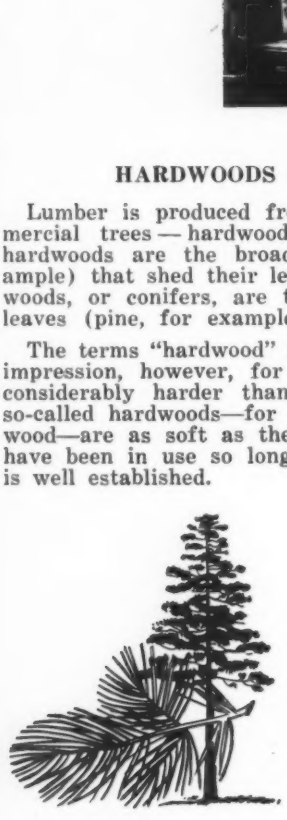
LUMBER

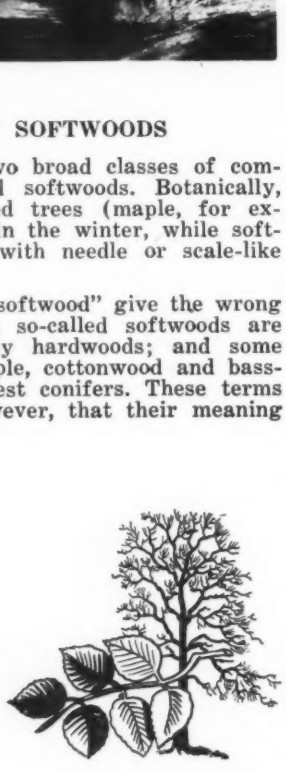
HARDWOODS AND SOFTWOODS

Lumber is produced from two broad classes of commercial trees — hardwoods and softwoods. Botanically, hardwoods are the broad-leafed trees (maple, for example) that shed their leaves in the winter, while softwoods, or conifers, are trees with needle or scale-like leaves (pine, for example).

The terms "hardwood" and "softwood" give the wrong impression, however, for some so-called softwoods are considerably harder than many hardwoods; and some so-called hardwoods—for example, cottonwood and basswood—are as soft as the softest conifers. These terms have been in use so long, however, that their meaning is well established.



Softwood



Hardwood

HOW LUMBER IS CLASSIFIED

Lumber is classified by (1) use, (2) size, and (3) extent of manufacture.

Classification by Use

1. Yard Lumber. This embraces the major quantity of lumber and includes those kinds used for general building purposes. Yard lumber consists principally of 2-inch dimension, timbers and inch boards used for siding, sheathing, subflooring, roof sheathing and miscellaneous purposes such as stepping, closets, shelving, interior trim, baseboards, etc. Yard lumber is graded on the basis of the intended use of the entire board for a given purpose rather than for further manufacture.

2. Factory and Shop Lumber. This is largely shipped from the sawmills directly to individual plants (including planing mills operated by retailers) for further manufacture. It is graded on the basis of the percentage of clear cuttings. Practically all hardwoods are intended for further remanufacture and many of the pines and Douglas fir are cut in 1" and 2" thicknesses for remanufacture into doors, framing, sills, sash, furniture parts and other similar products.

3. Structural Lumber. This is lumber two inches or more in thickness and 4 or more inches wide intended for use where working stresses are important. The grading of structural lumber is based upon the strength and use of the entire piece as such.

Classification by Size

Yard lumber is further classified by size as follows:

Strips—less than two inches thick and less than eight inches wide.

Boards—less than two inches thick and eight inches or more wide.

Dimension—lumber that is at least two inches but less than five inches thick of any width.

Timbers—five inches or more thick.

Structural lumber is further reclassified by size according to (1) dimension (which are sometimes known as joists and planks) consisting of lumber from two inches to but not including five inches thick, and four inches or more wide; (2) timbers five inches or more in least dimension. Timbers may be classified as beams and stringers 5 x 8 inches or larger, and posts and timbers which are square pieces 5 x 5 inches and larger and intended to carry longitudinal loads.

How classification by use and classification by size are used to classify softwood lumber is shown in the accompanying outline, "General Classification of Softwood Lumber." Grade names used by lumber manufacturers associations for the various classes of materials under the American Lumber Standards system are given.

Commons and Selects

As can be seen by the outline, yard lumber is broken down into two main quality grade divisions:

1. Select lumber.—Select lumber, according to the American Lumber Standards, is:

Generally clear, containing defects limited both as to size and number, and smoothly finished and suitable for use as a whole for finishing purposes or where large clear pieces are required.

Two classes of select lumber are provided:

(a) That suitable for natural finishes, graded as A and B.

(b) That having defects and blemishes of somewhat greater extent than (a), but which can always be covered by paint, graded as C and D.

2. Common lumber.—The American Lumber Standards specify common lumber as that having numerous defects and blemishes preventing its use for finishing purposes, but suitable for general utility and construction purposes.

Again, American Lumber Standards recognize two general classes:

(a) Common lumber which can be used as a whole for purposes in which surface covering or strength is required. All defects and blemishes in this classification must be sound. This class includes No. 1 and No. 2 common.

(b) Common lumber containing very coarse defects likely to cause waste in the use of the piece. This class includes No. 3, No. 4, and No. 5 common.

Dimension lumber is available only in the three upper grades No. 1, No. 2, and No. 3 common.

Classification by Extent of Manufacture

Lumber is classified according to the extent to which it is manufactured as follows:

Rough lumber—lumber that comes from the headsaw and has not been dressed by surfacing.

Surfaced lumber—lumber that has been dressed or planed by passing through a planer—it may be dressed one side, two sides, one edge, or a combination of sides and edges.

Worked lumber — lumber that has been run through a matching machine or moulder to provide machined lumber for flooring, or shiplapped lumber that is worked

to provide a lapped joint along the edges, or patterned lumber that is shaped to a given pattern or mould.

Note: For each standard nominal thickness there is a recognized minimum in the surfaced or finished thickness for each size classification. For example, inch lumber dressed one or two sides must be at least 25/32" in thickness for the standard yard board. For the standard industrial board 13/16" or 26/32" dressed one or two sides is recognized as standard. Yard dimension of nominal 2" thickness shall be dressed to 1⅝", and for standard industrial dimension 1¾" thick. This applies whether the dimension piece is dressed one or two sides. In width, dressing shall not take more than ⅜" off lumber of a standard width of 3", ½" off for widths of 4" to 7" inclusive, and ¾" for widths of 8" to 12".

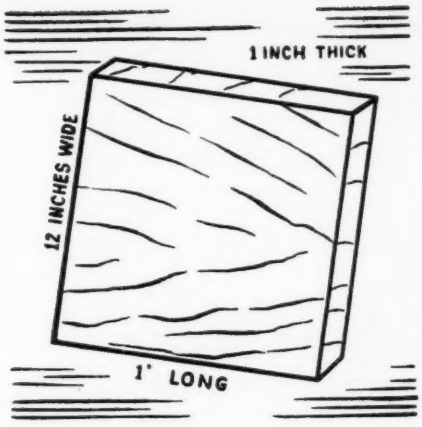
HOW LUMBER IS MEASURED

In the early days of lumber manufacturing lumber was cut into boards and dimensions, and was sold rough-sawn as it came from the saw. Despite the advent of the planing mill which dressed lumber to uniform thickness and size, the custom of figuring lumber on the rough-sawn size continued. The unit of measure of lumber—the board foot—is based on its rough-sawn size.

How to Figure Board Feet

The board foot, or one square foot in area by one inch thick, is usually used in the measurement of lumber, except in the case of small material like moulding, which is sold by the running foot; shingles, which are sold by the square; or posts, poles, and similar materials sold by the piece.

For Lumber Less Than One Inch Thick: When the lumber is less than an inch thick the usual custom is to treat it in measurement as if it were an inch thick. In some cases, however, account is taken of the thickness when it runs below ⅞ inch. Usually, however, allowance is made in the price of such thin material rather than in the measurement.



THE BOARD foot is a standard lumber measurement, and is one foot square and one inch thick.

For Lumber of Fractional Thicknesses: For material 1¼ or 1½ inches thick in the rough, the number of square feet of superficial surface is increased by ¼ and ½, respectively, to take account of the increased thickness. Similarly, for material 2½ inches thick the superficial surface is multiplied by 2½ to give the correct number of board feet.

For Dressed Lumber: The number of board feet in dressed lumber is usually based on the thickness of the board before planing; hence, boards ⅞ of an inch dressed are treated as one-inch material, and similarly boards 1⅛ inches thick are treated as 1¼ inches, the usual amount taken off in dressing being about ⅛ of an inch. In the measurement of flooring the width of the board is taken in a similar manner; i. e., from the width of the original piece before trimming. It thus includes the full width of the board, including the tongue in tongued and

GENERAL CLASSIFICATION OF SOFTWOOD LUMBER

- Softwood lumber (this classification applies to rough or dressed lumber; sizes given are nominal)
  - Yard lumber (lumber less than 5 inches thick, intended for general building purposes; grading based on use of the entire piece)
    - Finish (less than 3 inches thick and 12 inches and under in width) — Grades: A select; B select; C select; D select
    - Boards (less than 2 inches thick and 8 inches or over in width). Strips (under 8 inches in width) — No. 1 boards; No. 2 boards; No. 3 boards; No. 4 boards; No. 5 boards
    - Dimension (2 inches and under 5 inches thick and of any width)
      - Planks (2 inches and under 4 inches thick and 8 inches and over wide) — No. 1 dimension; No. 2 dimension; No. 3 dimension
      - Scantling (2 inches and under 5 inches thick and under 8 inches wide) — No. 1 dimension; No. 2 dimension; No. 3 dimension
      - Heavy joists (4 inches thick and 8 inches or over wide) — No. 1 dimension; No. 2 dimension; No. 3 dimension
  - Structural material (lumber 5 inches or over in thickness and width, except joist and plank; grading based on strength and on use of entire piece)
    - Joist and plank (2 inches to 4 inches thick and 4 inches and over wide)
    - Beams and stringers (5 inches and over thick and 8 inches and over wide)
    - Posts and timbers (6 by 6 inches and larger)
  - Factory and shop (grading based on area of piece suitable for cuttings of certain size and quality)
    - Factory plank graded for door, sash, and other cuttings 1 inch to 4 inches thick and 5 inches and over wide
      - Factory clears upper grades — Nos. 1 and 2 clear factory; No. 3 clear factory
      - Shop lower grades — No. 1 shop; No. 2 shop; No. 3 shop
    - Shop lumber graded for general cut up purposes
      - 1 inch thick (northern and western pine, and Pacific coast woods) — Select; Shop
      - All thicknesses (cypress, redwood, and North Carolina pine) — Tank and boat stock, firsts and seconds, selects; No. 1 shop; No. 2 shop, box

grooved material. Where there is any possibility of misunderstanding as to the unit of measurement of lumber, the method to be used should be definitely agreed upon between purchaser and salesman.

The rule is:

Multiply together:

Thickness in inches $\times$ $\frac{\text{width in inches}}{12}$ $\times$ length in ft.

Lumber of less than one inch thickness in rough sawing is figured as if it were one inch thick and the adjustment for its thinness is made in the price per thousand.

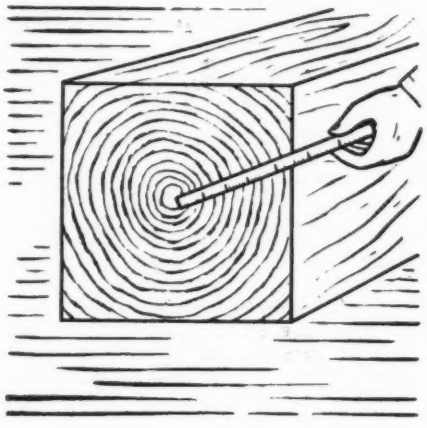
STRENGTH PROPERTIES OF LUMBER

In the construction of a dwelling house the strength of its timbers, joists, and studding is an important consideration. No definite rule can be laid down, however, as to the necessary size of each piece, for this varies with the size of the building, the type of construction, the length of the span, and the distance the supporting members are apart. The selection of proper dimensions is an engineering problem and should be left to a competent architect. A few suggestions, however, may be of value to the owner in inspecting his building or building material.

Density a Key to Strength

The strength of structural timbers, whether bending strength, as in joists and rafters; the side-crushing strength, as in sills and the end of joists; or the end-crushing strength, as in studding—is influenced by several factors. The density of the wood, as indicated by its dry weight, is a good indication of its strength. Heavy woods, like oak, yellow pine, and Douglas fir are much stronger than lighter woods, as white spruce and white pine. The density of the softwoods, and also the oaks and other ring-porous hardwoods, can be judged by the percentage of dense summer wood as seen on the smoothly cut end surface. For the softwoods, like yellow pine, tamarack, hemlock, and Douglas fir, the densest wood is usually found in pieces showing neither very slow growth nor very rapid growth. In the southern yellow pines and Douglas fir an average of six rings per inch, with an average of one-third of each ring summer wood, indicates excellent quality so far as strength is concerned. In general, for ring-porous hardwoods, as oak, ash, and chestnut, the wider the rings the stronger the wood. The home builder should be particularly careful that those timbers which have heavy loads to support be not of very wide or of extremely narrow-ringed softwoods, or very narrow-ringed hardwoods, unless they are larger than would be necessary for timbers of average rate of growth.

ILLUSTRATION at right shows where "side cut" and "boxed heart" are cut from a log.



MEASURING the number of growth rings per inch, for "dense" and "close" grain.

Sapwood as Strong as Heartwood

Whether a stick of timber contains much or little sapwood has no direct bearing on the strength. Other things being equal, sapwood is as strong as heartwood. Sapwood, as a rule, is less durable than heartwood, and, consequently, under conditions favoring decay it may soon be destroyed, weakening the structure correspondingly. If the wood is to be given a preservative treatment, sapwood is not objectionable, for it absorbs preservatives more readily than heartwood.

Direction of Grain

The direction of the grain should be parallel to the sides of a stick in order to afford maximum strength. Diagonal grain greatly reduces the strength of the wood.

DRYING OF LUMBER

After lumber is cut in the mill, possibly no other factor will so greatly increase its usefulness as proper seasoning. With the exception of timbers, practically all commercial lumber is seasoned either by the air-drying method or through the use of kilns. This is done for the purpose of:

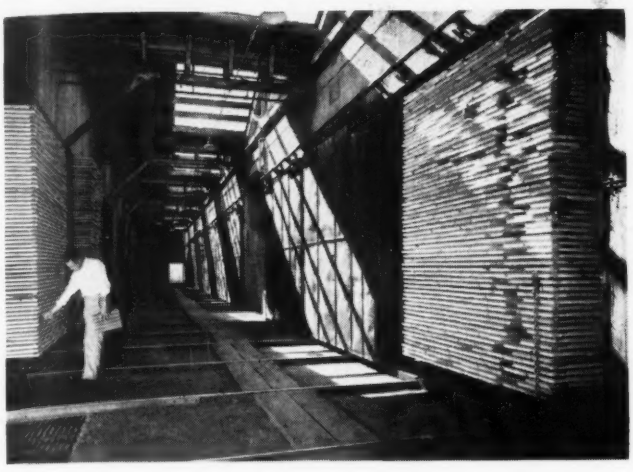
1) Increasing its strength and stiffness.
2) Adding to its lasting qualities—more resistant to decay and insect attack.
3) Preventing shrinking and checking in use.
4) Minimizing stain.
5) Decreasing weight, resulting in lower freight and handling costs.

When lumber is freshly cut from the tree, it is literally

STANDARD SIZES OF LUMBER

Conforming with the recommendations of the Lumber Industry as set forth in Simplified Practice Recommendations No. 16 published by the United States Department of Commerce.

Type of Lumber	Nominal Size Thickness	Nominal Size Width	Actual Size S4S At Comm. Dry Shp. Wt. Thickness	Actual Size S4S At Comm. Dry Shp. Wt. Width
Dimension	2 in.	4 in.	1⅝ in.	3⅝ in.
	2 in.	6 in.	1⅝ in.	5⅝ in.
	2 in.	8 in.	1⅝ in.	7½ in.
	2 in.	10 in.	1⅝ in.	9½ in.
	2 in.	12 in.	1⅝ in.	11½ in.
Timbers	4 in.	6 in.	3½ in.	5½ in.
	4 in.	8 in.	3½ in.	7½ in.
	4 in.	10 in.	3½ in.	9½ in.
	6 in.	6 in.	5½ in.	5½ in.
	6 in.	8 in.	5½ in.	7½ in.
	6 in.	10 in.	5½ in.	9½ in.
	8 in.	8 in.	7½ in.	7½ in.
	8 in.	10 in.	7½ in.	9½ in.
Common Boards	1 in.	4 in.	25/32 in.	3⅝ in.
	1 in.	6 in.	25/32 in.	5⅝ in.
	1 in.	8 in.	25/32 in.	7½ in.
	1 in.	10 in.	25/32 in.	9½ in.
	1 in.	12 in.	25/32 in.	11½ in.
Shiplap Boards	1 in.	4 in.	25/32 in.	3⅛ in. face
	1 in.	6 in.	25/32 in.	5⅛ in. face
	1 in.	8 in.	25/32 in.	7⅛ in. face
	1 in.	10 in.	25/32 in.	9⅛ in. face
	1 in.	12 in.	25/32 in.	11⅛ in. face
Tongued and Grooved Boards	1 in.	4 in.	25/32 in.	3¼ in. face
	1 in.	6 in.	25/32 in.	5¼ in. face
	1 in.	8 in.	25/32 in.	7¼ in. face
	1 in.	10 in.	25/32 in.	9¼ in. face
	1 in.	12 in.	25/32 in.	11¼ in. face



THE ABOVE shows a typical scene of a dry kiln and an air-drying yard.

saturated with water. As the lumber dries out, shrinkage occurs. This shrinkage should take place at the mill before shipment is made. After being properly dried and dressed to standard size or worked to pattern, it stays put in construction, because the moisture content of the lumber has been approximately stabilized with atmospheric conditions.

In the air-drying of lumber, correct stacking is extremely important. Rapid and efficient air-drying is dependent upon proper circulation of air through all parts of the stack. Improper stacking not only prolongs the drying process, but invites losses through checking, warping, and discoloration. Properly stacked lumber is usually sufficiently dry for shipment in from 60 to 90 days depending upon weather conditions.

The term **kiln-dried** means lumber dried in a kiln with the use of controlled heat, humidity, and air circulation. There is evidence that kiln drying of lumber was employed 3,000 years ago, so the practice is certainly not new.

Early kilns used wood as fuel, and were called **smoke kilns.** It is a great advance from these primitive smoke kilns to the modern progressive-type kiln with absolutely controlled heat, humidity, and circulation which permits rapid and uniform drying to specific percentages of moisture content while holding seasoning defects to a minimum. Correct stacking is also important to proper kiln drying.

Modern kiln drying, in addition to being far faster, has certain other advantages over air-drying. It accomplishes (a) greater reductions in weight by lower moisture content, (b) the production of lumber to any specific per-

LUMBER CALCULATOR

For computing board feet

Figures shown below are board feet in sizes and lengths of lumber shown.

Size In Inches	8′	10′	12′	14′	16′	18′	20′	22′
1 x 2	1⅓	1⅔	2	2⅓	2⅔	3	3⅓	3⅔
1 x 3	2	2½	3	3½	4	4½	5	5½
1 x 4	2⅔	3⅓	4	4⅔	5⅓	6	6⅔	7⅓
1 x 5	3⅓	4⅙	5	5⅚	6⅔	7½	8⅓	9⅙
1 x 6	4	5	6	7	8	9	10	11
1 x 8	5⅓	6⅔	8	9⅓	10⅔	12	13⅓	14⅔
1 x 10	6⅔	8⅓	10	11⅔	13⅓	15	16⅔	18⅓
1 x 12	8	10	12	14	16	18	20	22
5/4 x 4	3⅓	4⅙	5	5⅚	6⅔	7½	8⅓	9⅙
5/4 x 6	5	6¼	7½	8¾	10	11¼	12½	13¾
5/4 x 8	6⅔	8⅓	10	11⅔	13⅓	15	16⅔	18⅓
5/4 x 10	8⅓	10 5/12	12½	14 7/12	16⅔	18¾	20⅚	22 11/12
5/4 x 12	10	12½	15	17½	20	22½	25	27½
6/4 x 4	4	5	6	7	8	9	10	11
6/4 x 6	6	7½	9	10½	12	13½	15	16½
6/4 x 8	8	10	12	14	16	18	20	22
6/4 x 10	10	12½	15	17½	20	22½	25	27½
6/4 x 12	12	15	18	21	24	27	30	33
2 x 4	5⅓	6⅔	8	9⅓	10⅔	12	13⅓	14⅔
2 x 6	8	10	12	14	16	18	20	22
2 x 8	10⅔	13⅓	16	18⅔	21⅓	24	26⅔	29⅓
2 x 10	13⅓	16⅔	20	23⅓	26⅔	30	33⅓	36⅔
2 x 12	16	20	24	28	32	36	40	44
2 x 14	18⅔	23⅓	28	32⅔	37⅓	42	46⅔	51⅓
2 x 16	21⅓	26⅔	32	37⅓	42⅔	48	53⅓	58⅔
3 x 4	8	10	12	14	16	18	20	22
3 x 6	12	15	18	21	24	27	30	33
3 x 8	16	20	24	28	32	36	40	44
3 x 10	20	25	30	35	40	45	50	55
3 x 12	24	30	36	42	48	54	60	66
4 x 4	10⅔	13⅓	16	18⅔	21⅓	24	26⅔	29⅓
4 x 6	16	20	24	28	32	36	40	44
4 x 8	21⅓	26⅔	32	37⅓	42⅔	48	53⅓	58⅔
4 x 10	26⅔	33⅓	40	46⅔	53⅓	60	66⅔	73⅓
4 x 12	32	40	48	56	64	72	80	88
6 x 6	24	30	36	42	48	54	60	66
6 x 8	32	40	48	56	64	72	80	88
6 x 10	40	50	60	70	80	90	100	110
6 x 12	48	60	72	84	96	108	120	132
8 x 8	42⅔	53⅓	64	74⅔	85⅓	96	106⅔	117⅓
8 x 10	53⅓	66⅔	80	93⅓	106⅔	120	133⅓	146⅔
8 x 12	64	80	96	112	128	144	160	176
10 x 10	66⅔	83⅓	100	116⅔	133⅓	150	166⅔	183⅓
10 x 12	80	100	120	140	160	180	200	220
12 x 12	96	120	144	168	192	216	240	264
12 x 14	112	140	168	196	224	252	280	308
12 x 16	128	160	192	224	256	288	320	352

centage of moisture content, and (c) the killing of stain or decay fungi or insects that may have infected the wood.

DETERMINING MOISTURE CONTENT

There are several ways to determine the moisture content of lumber. One of the most common is by the use of weight tables. This method can give a close approximation but is not specifically accurate to the exact percentage point.

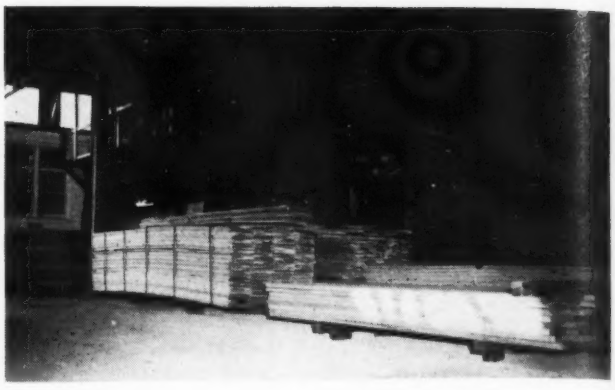
Tables of weight have been developed for all species of commercial lumber. There is a remarkable standard of sameness by species, so a given number of feet of lumber of a particular species containing a given percentage of moisture, will always weigh approximately the same as any other like unit. There is, of course, a weight variation in species between hardwood and softwood, and this must be considered in such calculations.

The most accurate method of determining moisture content is by the use of a **moisture meter, or calculator.** There are a number of these electronic instruments available that when placed on a piece of lumber will immediately register the exact content of that particular piece. (See Section 25, Machinery and Equipment.)

STAIN PREVENTION

The presence of stain in lumber does not necessarily impair its utility, but since most manufacturers recognize that stain detracts from appearance and from merchandising value, methods of seasoning are usually followed to eliminate or reduce the hazard of stain.

If lumber is properly handled and protected before and after kiln drying, stain can be entirely eliminated. Under very favorable conditions and through correct handling, ordinary air-drying may be accomplished without stain.

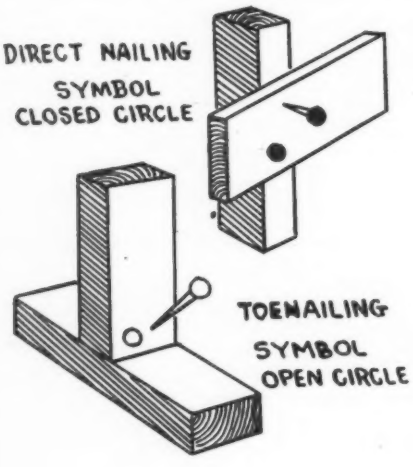


THE PRACTICE of strapping lumber, not only for shipment but also for storage, is gaining widespread favor among dealers.

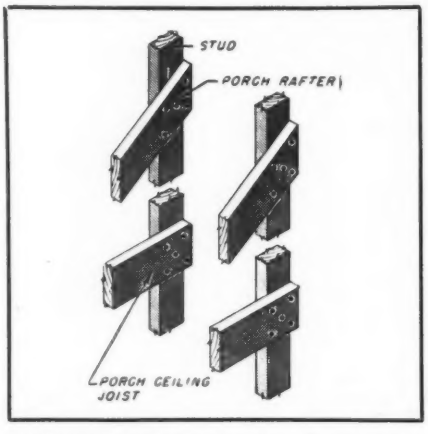
Such favorable conditions, however, are rarely found for air-drying, and in order to reduce stain in air-dried lumber, many manufacturers find it necessary to dip the green lumber in an anti-stain solution. While not 100% effective, these solutions are highly efficient and satisfactory.

The common practice for dipping with an anti-stain

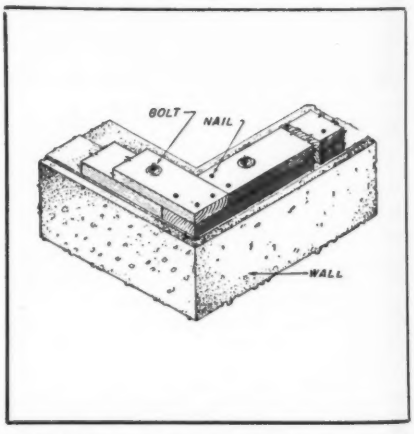
Construction Details and Correct Nailing Procedures



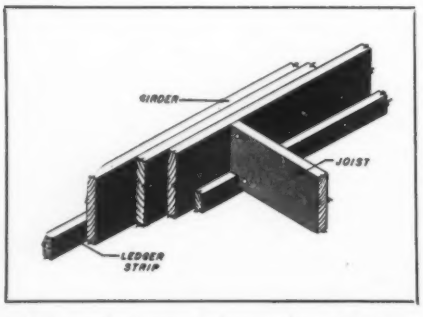
WHILE the importance of correct nailing in a house construction is generally recognized, there has existed little information on the subject. The drawings in this section have been prepared by the U. S. Forest Products Laboratory as a simple guide to correct nailing practices. These drawings, prepared by John C. Killebrew of the FPL also include nomenclature of house members and an excellent study of light construction design.



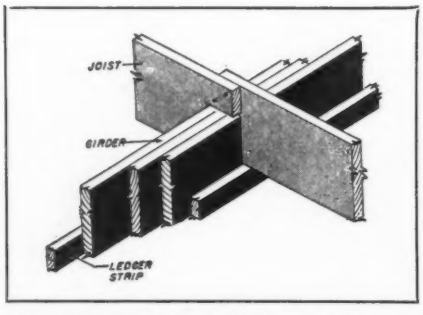
***CONNECTION** of porch roof to house. Porch rafters and ceiling joists nailed to studs of the house with five 10d nails.*



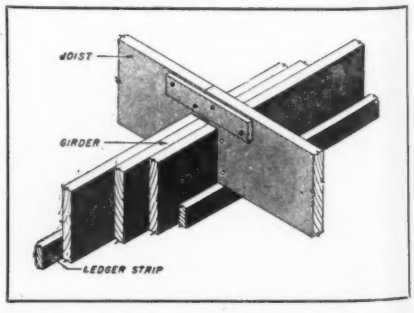
***DOUBLE** sill. Upper part nailed to lower with tenpenny nails; two near each end of each piece, others staggered with a longitudinal distance of 24 inches between nails.*



***JOIST** notched over ledger strip. Joist toenailed to girder and to ledger strip with one 10d nail as shown or from opposite sides of joist.*



***OVERLAPPING** joists notched over girder and bearing on ledger strip. Each joist toenailed to girder with one 10d nail; joist nailed together with two 10d nails.*

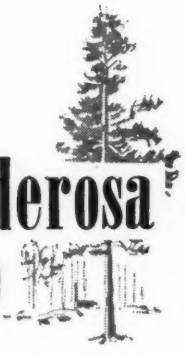


***JOISTS** notched over girder and bearing on ledger strip. Each joist toenailed to girder with two 10d nails; wood strip nailed with two 8d nails in each joist.*

Geo. J. Silbernagel

Wholesale Distributor of

WEST COAST LUMBER
and LUMBER PRODUCTS

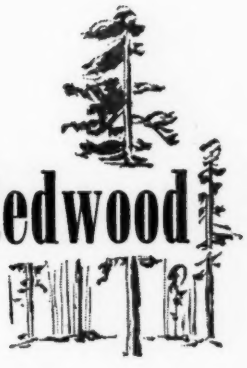


Ponderosa Pine

- Lumber
- Windows & Sash
- Doors
- Frames
- Inside Door Jambs
- Mouldings
- Glued-Up Stock
- Ironing Boards

Douglas Fir

- Lumber
- Doors
- Mouldings
- Flooring
- Finished Uppers
- Pickets
- Porch Rail
- Newels
- Gutter
- Plywood



Redwood

- Bevel Siding
- Bungalow Siding
- Finish Lumber
- Mouldings
- Flooring
- Ceiling
- Pickets

Geo. J. Silbernagel

GENERAL OFFICE

8 S. Michigan Avenue • Chicago 3, Illinois

Phone RAndolph 6-0540

TIMBER SUPPLY

Medford Corporation has a timber reserve of more than a billion feet of Sugar Pine, Ponderosa Pine, Douglas Fir and White Fir. The stand is of intermingled species, but predominately Douglas Fir of high quality, with long, strong fibers and is unsurpassed for structural uses. The White Fir is small-knot type timber. Its soft texture makes building easy. The Pines come from lands ranging in altitude from 2500 feet to 4500 feet. The Sugar Pine is unexcelled for its soft, light even textured structure. The Ponderosa Pine is representative of this Western species.

FACILITIES

Medford Corporation has well-rounded logging facilities capable of harvesting 350 M feet or more of logs daily. Medco has its own logging railroad with 66 miles of track which makes it possible for a year around logging operation when winter truck logging cannot be accomplished. Medford's manufacturing facilities are complete and modern. There is a 165 acre mill site with sufficient room for future expansion of manufacturing facilities. The log pond of ten acres holds about 3 million feet of logs—about a 9 days' supply.

In the sawmill are two 9-foot band mills, a 42" Gang, two 10"x 72" Double Edgers, Pony Edger, 6' Horizontal Re-saw, and two 26" automatic Air Trimmers. A battery of 18 modern Kilns scientifically dry Medco's stock. The Planing Mill equipment is complete with Sticker, Matcher, Surfacer, Sizer, Timber Sizer, Resaw, and various Rip and Trim saws and auxiliary equipment.

All transportation handling is done mechanically with Straddle and Lift trucks. There is undercover storage capacity for 7¾ million feet of lumber. All carloading is done under roof.

PRODUCTS

SUGAR PINE—pattern stock, 8/4, 10/4, 12/4, & 16/4; 4/4, 5/4, & 6/4 Selects for general Millwork uses, with special emphasis on Wide 5/4, especially in drainboard widths; the Shop is cut in thicknesses according to demand; Commons go mostly into Box Lumber, but the unusual blood-red color of knots makes an outstanding knotty Pine panel for interior or exterior uses.

PONDEROSA PINE—makes beautiful Finish lumber for all kinds of interior Millwork. We specialize in thicknesses up to 8/4 and mill in our own plant such standard items as Casing, Base, Moulding, Bevel Siding and numerous other patterns. We furnish factory lumber in all standard thicknesses.

DOUGLAS FIR — products include all types of yard and shed items in Clears, such as Flooring, Siding, Finish, Casing, Base, Mouldings, etc., and Commons in Boards and Dimension: Construction posts and beams, timbers up to 16x16x32'; preservative treated dimension and Timbers; and Industrial Clears such as Ladder and Pole stock, Car Material and thick Clears.

WHITE FIR—goes mostly into Board Sheathing and all Dimension light framing stock.

QUALITY DEPENDABLE

Close supervision of all manufacturing operations insures the finest machine work. The American Lumber Standard is our guide for sizes. Grading and tallying are carefully and expertly done under the supervision of the West Coast Bureau of Lumber Grades & Inspection, and the Western Pine Association.

We have sufficient capacity in our battery of 18 modern Kilns to dry all of our Fir Uppers and our entire Pine production.

A LONG-LIFE OPERATION

Medco's large timber reserve has been operated since 1935 on a selectively cut basis, taking out the mature trees and leaving the younger growth for a second cycle of cutting. Medco is working toward an annual budgeted schedule that should eventually balance cutting against growth. The fire protection plan provides for the prompt piling and burning of logging slash on a current basis. Fire trails and roads are being developed to permit easy access to any part of the timber reserve. Snag falling and insect control work are part of Medford's program for the establishment of perpetuity for all of its timberlands in order to give Nature every assistance in replenishing the timber supply and thus prolonging the life of the operation.

MEDFORD CORPORATION • Medford, Oregon

DOUGLAS FIR—SUGAR PINE—PONDEROSA PINE—WHITE FIR

ANNUAL CAPACITY 70 MILLION FEET

Members of West Coast Lumbermen's Assn., West Coast Bureau of Lumber Grades & Inspection, Western Pine Assn.

solution is to carry the lumber through the vat on conveyor chains. After this treatment, it is sorted for air-seasoning in the usual manner.

RESISTANCE OF WOOD TO DECAY

The length of time wood will remain free from decay (rot) depends on the conditions under which it is placed and on the kind of wood. Wood will not decay if kept thoroughly air-dry or if thoroughly saturated with water. Specimens have been taken from buildings several hundreds of years old in which the wood showed no signs of deterioration. Similarly, woods taken from the bottom of lakes or from old wells have been found sound after hundreds of years of submergence. Decay takes place most rapidly in wood kept damp and warm.

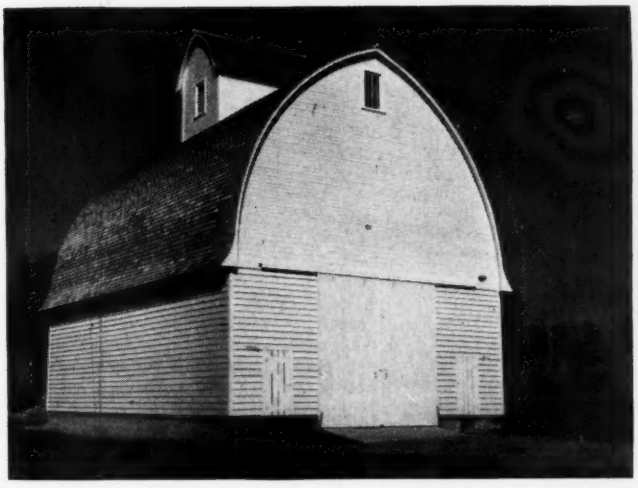
The sapwood of practically all woods is not durable and should never be used under conditions favorable for decay. In speaking of the relative durability of woods, the heartwood only should be considered. Woods in which the heartwood cannot easily be differentiated from the sapwood, on account of the light color of the heartwood, usually show relatively little durability, although Port Orford Cedar is a notable exception.

Except for the naturally-durable species (and it should be noted that only certain grades of even these woods are recommended as being resistant to rot fungus), lumber should be preservatively treated with an approved preservative and by a recognized process if it is to be used where it will be exposed to decay or termite attack. For further information on this, see the Wood Preserving division in this section.

ESTIMATING LUMBER REQUIREMENTS

Very frequently the dealer is called upon to estimate the amount of lumber that will be required to construct or remodel a house or farm building or some other structure.

In such cases, lumber requirements can be estimated on either the basis of the number of pieces needed, the lineal feet required or the board feet required.



***BECAUSE** of its durability and versatility, lumber has wide usage on the nation's farms and incorporates both beauty and utility as shown in the above corn crib.*

Estimating by the Piece

It is estimated by the piece if:

a. each end rests on bearings that are a stated distance apart, or
b. a number of pieces are required that are the same length, or
c. a definite length is needed to cut without waste.

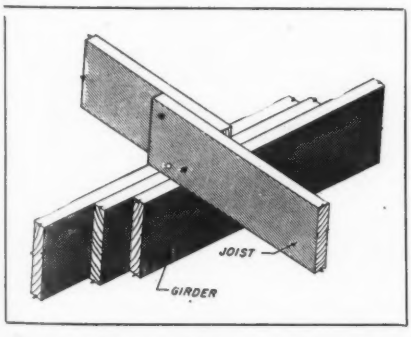
Estimating by the Lineal Foot

It is estimated by the lineal foot if the stock can be joined almost anywhere.

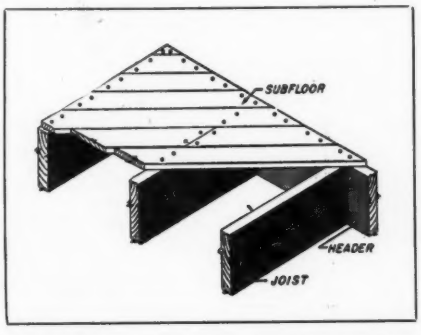
Estimating by the Board Foot

It is estimated by board measure where there is an area to be covered.

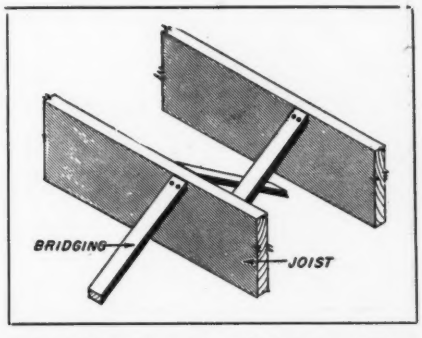
It is standard lumber practice that all fractional parts of a lineal or board foot of lumber are counted as another



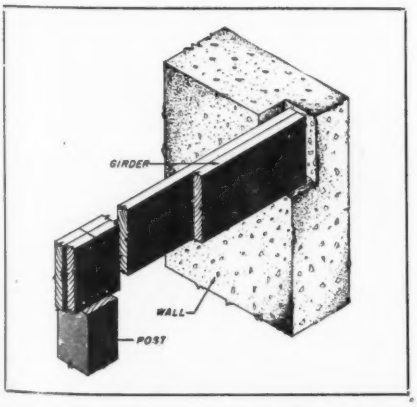
***JOIST** bearing on girder or partition. Joists nailed with two 10d nails and toenailed to girder with one 10d nail on each side of pair of joists.*



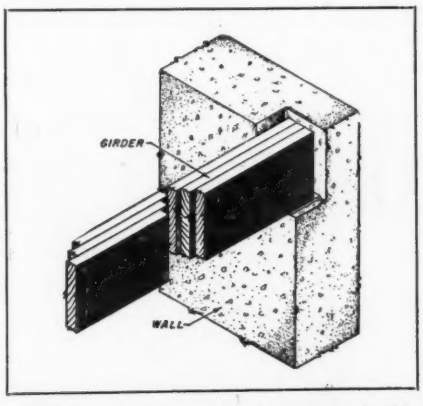
***SUBFLOOR** or attic floor, boards six inches or less wide nailed with two 8d nails at each crossing of framing member; preferabl·· no cracks between board·*



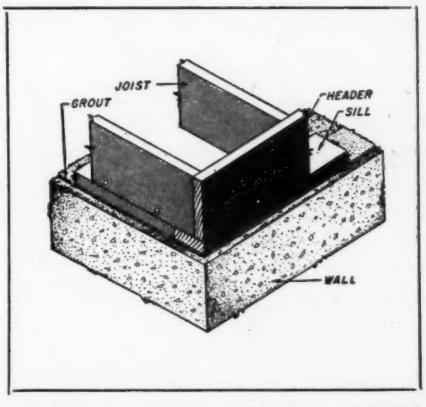
***BRIDGING**, each piece of bridging nailed at each end with two 8d nails; nailing of bottom ends deferred until after placement of subfloor.*



***TWO**-piece girder. Nailed from one side with 10d nails, two in each end of each piece, other staggered. Girder toenailed to post with two nails.*



***THREE**-piece girder. Nailed from each side with 20d nails, two near each end of each piece, others staggered with 32 inches between nails. Joints only at supports.*



***HEADER** joist nailed to other joists with 20d nails, three to end joist and two to others. End and header joist toenailed to sill 16 inches on center.*

foot. All odd number of lengths of lumber are increased to the next even foot unless two pieces are coming into an even foot length of stock.

As can be seen in the table, "Standard Sizes of Lumber", listing the nominal sizes and the actual sizes of lumber, an allowance must be made in estimating to cover the dressed sizes of lumber. For example, to cover 100 square feet of surface requires more than 100 board feet of 6-in. dressed boards. A certain percentage must be added to each width of each kind of material to make up for this loss in dressing, shiplapping or matching. Then too, there is a wastage in cutting on the job by the carpenter which must also be taken in consideration. This wastage varies with each kind of material, where it is used and the method of applying it.

Finding Area, Perimeter, Cubic Content, Etc.

As estimating lumber requirements frequently calls for finding the area and perimeter of circles, the cubic content of excavations, etc., the following simplified formulas are listed for the dealer's convenience:

Volume—To find the cubical contents of an excavation, trench, etc., multiply the length by width by the depth or thickness. To find the cubical contents of a cylinder multiply the area of the base by the altitude. To find the cubical contents of a pyramid or cone, multiply the area of the base by one-third of the altitude.

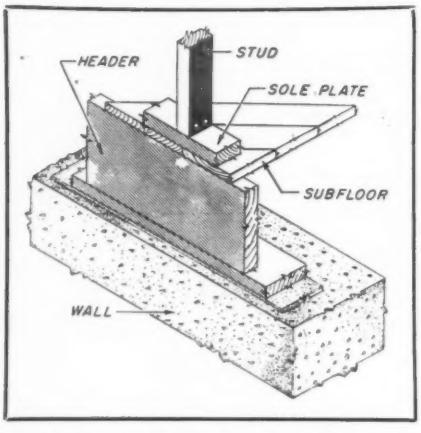
Perimeter—The perimeter is the distance around a square or a rectangle. It is found by adding the length and width of the building and multiplying by 2.

The **circumference** of a circle (distance around a circular building)—multiply the diameter by pi (3.1416).

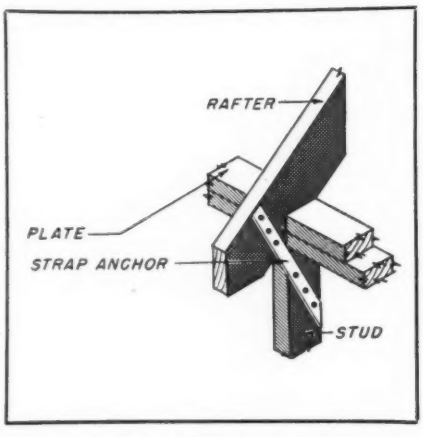
Hypotenuse of a triangle—the square root of the sums of the squares of two sides of a triangle.

***MANY** unusual effects are being obtained with special finish boards for interior room surfacing. The above is an interesting example of various types of lumber products combined into a remarkably pleasing room.*

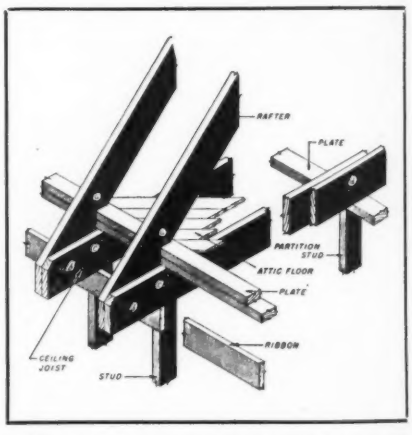
Areas—Squares and rectangles—length multiplied by the width. Circular buildings — radius squared × pi (3.1416). Triangles—length of the base × ½ the length of the altitude.



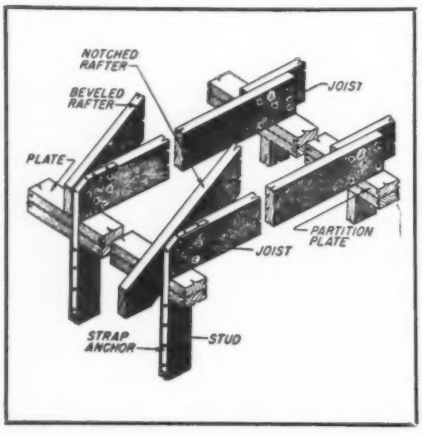
***STUDS.** Toenailed to sole plate with two 8d nails on each wide face. Note: one nail on each wide face is sufficient if diagonal boards or plywood is used as sheathing.*



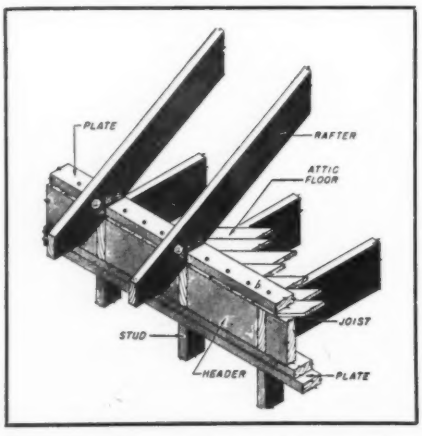
***STRAPS** to resist uplift on notched rafters. Straps placed on opposite sides and as nearly vertical as possible, nailed to each framing member with three 8d nails.*



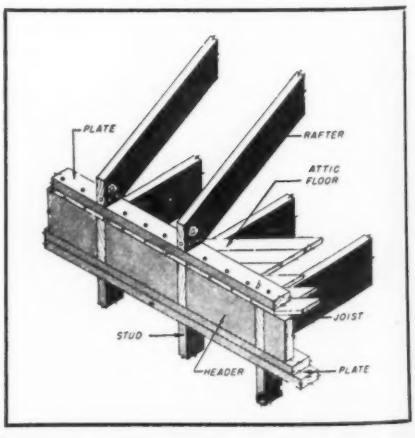
***RAFTER** nailing; a. rafter toenailed to plate with 1 10d nail; b. five 10d nails join rafter and joist, c. joist and stud and d. overlap of joists.*



***RAFTERS** and ceiling joist resting on wall plate; a. 5 10d nails through joist into rafter; b. overlap of joists at bearing with 5 10d nails; joist and rafter toenailed to plate with 4 10d nails.*

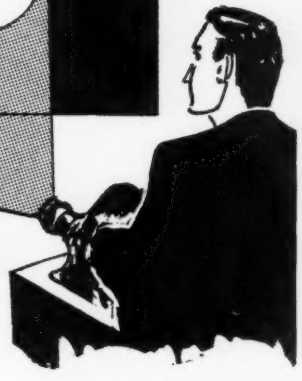


***NOTCHED** rafters resting on plate; a. rafters toenailed to plate with 2 10d nails on each side; b. plate nailed to joist with 1 16d and to headers with 16d nails spaced 4 inches on centers.*



***BEVELED** rafters resting on plate; a. rafter toenailed to plate with 5 10d nails; b. plate nailed to each joist with 1 16d and to headers or header joist with 16d nails spaced 4" on centers.*

CUT BUILDING COSTS WITH TWIN HARBORS *PRE-CUT* STUDDING*



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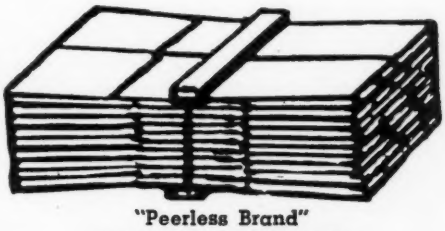

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Wood Laminates

MODERN CHEMISTRY is opening an entirely new field to the merchandising of lumber. It is a field that the alert building products merchant cannot afford to overlook.

Basically, chemistry's contribution to the advancement of engineered wood use in light construction is through (1) adhesives and (2) preservatives.

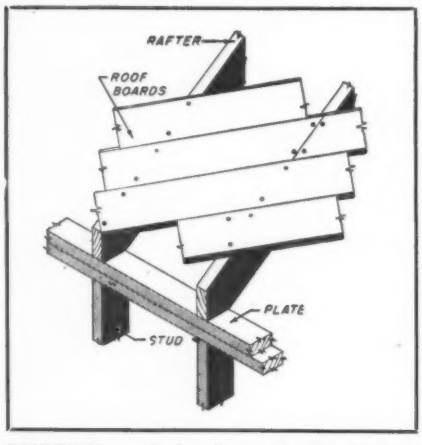
GLUED-LAMINATED FRAMING MEMBERS

Before a lumber dealer can sell this product to his customers, he has to know something about it—be able to answer questions about its advantages. While many dealers have already made the selling of laminated wood arches, trusses and rafters, an important part of their business, others have yet to experience its full potential value as a building material.

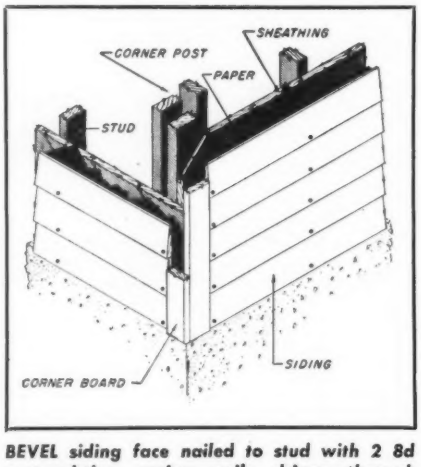
First, it should be explained that laminated wood arches, trusses and rafters are engineered for the job and are made of carefully kiln-dried quality Douglas fir, or other suitable structural species, in various lengths and for various spans, and glued together under pressure of more than 100 pounds per square inch. Arches and other curved framing members are made by gluing a number of boards or laminations, and bending them together on a special form to the required curvature. The arch is then clamped until the glue is properly dried, after which the arch or member retains its curvature. The width and number of laminations depend, of course, upon the building span, shape and spacing of framing members, and type and amount of loading. After fabrication, the members are planed smooth, cut, drilled, and fitted for rapid assembly.

By fully utilizing all of the inherent advantageous properties of wood, the manufacture of glued-laminated framing members makes possible the following advantages:

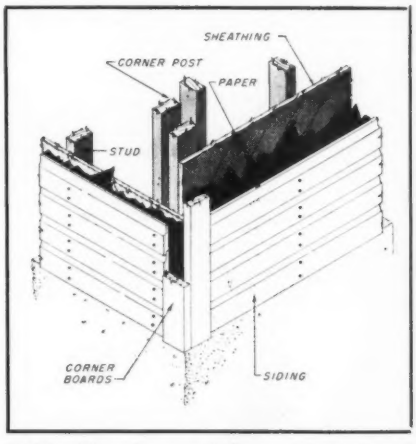
1. Material of the size used in manufacturing laminated members can be thoroughly seasoned in a short time, and will be subject to a minimum of warping, twisting and shrinkage, after installation.
2. Members of larger cross-sections and greater length



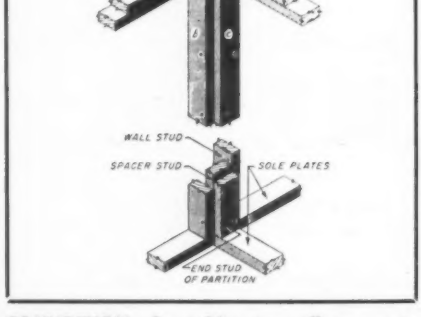
DIAGONAL *roof sheathing. Boards 6" and less nailed to rafters with 2 8d nails. Wider boards nailed with 3 8d. Diagonal sheathing should be similarly nailed and securely nailed to rafters at plate.*



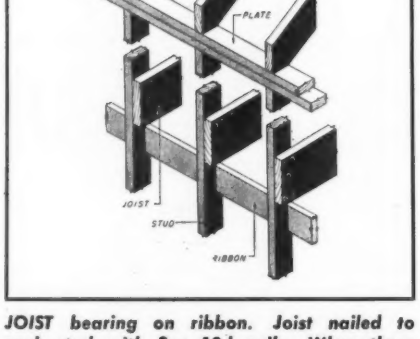
BEVEL *siding face nailed to stud with 2 8d rust-resisting casing nails driven through overlap of siding and through sheathing into each stud. Siding nails should be set and puttied.*



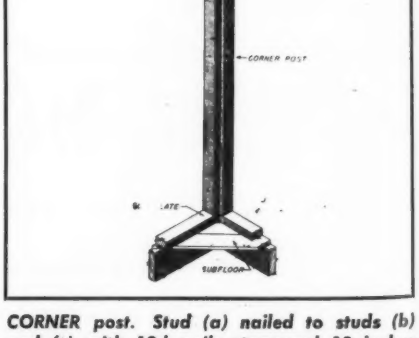
DROP *siding face nailed to each stud with 2 9d casing nails, one near lower edge and one above midheight of piece of siding. Ends of drop siding are fitted against the corner boards.*



CONNECTION *of partition to wall; a. upper member nailed to lower with 2 16d nails; b. wall studs to space stud with 16d, 12 inches on center; c. end stud to spacer stud with 10d, staggered 12 inches.*



JOIST *bearing on ribbon. Joist nailed to each stud with five 10d nails. When there is a full story above, two instead of five nails will be sufficient since ceiling joist will be available.*



CORNER *post. Stud (a) nailed to studs (b) and (c) with 10d nails staggered 12 inches and to each filler block (d) with one 10d nail. Post nailed to sole plate with two 8d nails on each face.*

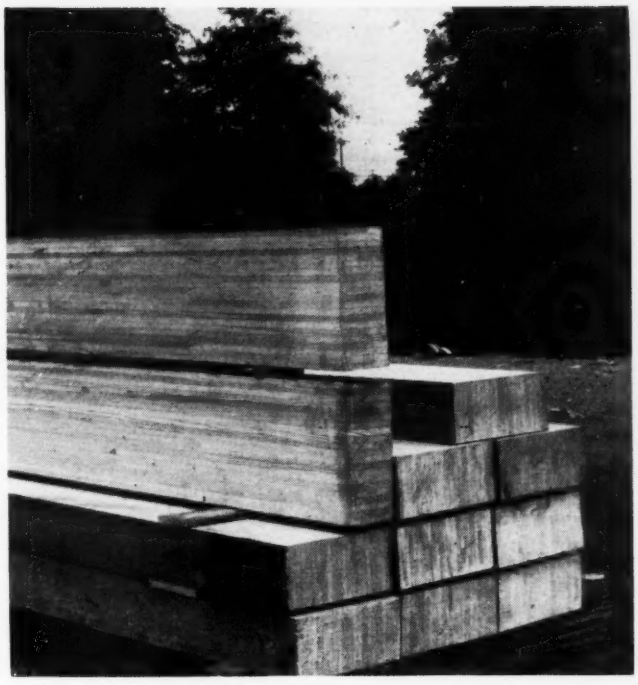
can be fabricated than are generally available in solid lumber and can be shipped conveniently over long distances.

3. Members can be fabricated from material that is too small to be structurally useful otherwise.
4. Laminae can be selected to place the best material where the greatest stresses occur.

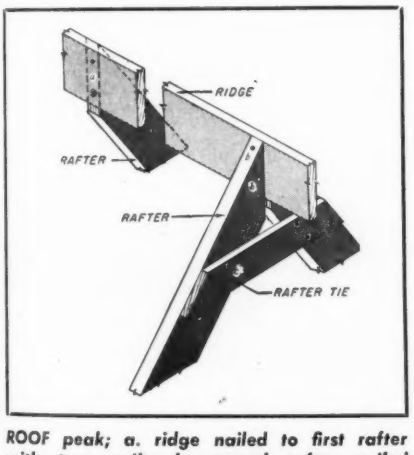
Modern glued laminated wood arches are manufactured in specified sizes with uniform strength, and new timber connectors join wood members together with a utilization of 80 percent or more of the wood's working strength. Manufacturers of glued laminated framing members supply adequately designed hardware for all connections to eliminate or strengthen the weakest points of ordinary construction.

While wood is strong in tension and compression, its full usefulness as applied to arches (the arch is the most efficient method of framing) could not be fully utilized until waterproof synthetic resin glues and skilled manufacturing techniques had been developed. In built-up laminations using nails and screws, the sliding of one laminae on another is never eliminated, resulting in the failure of the assembly of laminae to act as a fully efficient unit. By bonding with today's durable glues, sliding and shear between the laminations is eliminated.

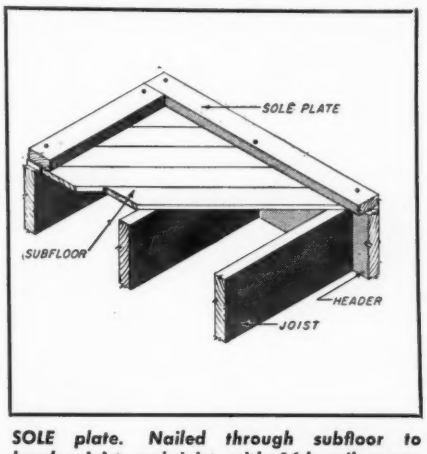
Originated in Germany shortly after the turn of the century, European designers and builders quickly recognized the potential—speed of manufacture, practicability,



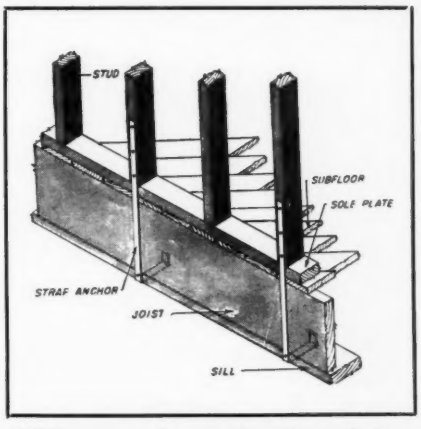
THE ABOVE bridge timbers are made of multi-plys of southern yellow pine.



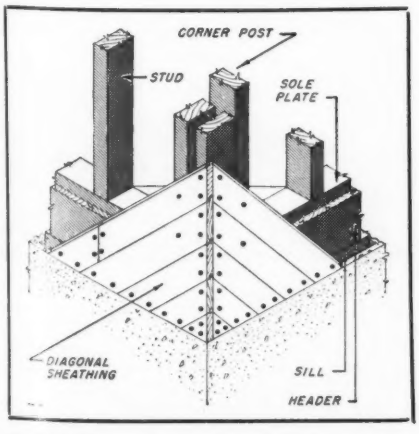
ROOF peak; a. ridge nailed to first rafter with two nails; b. second rafter nailed through top edge to ridge with one 10d and toenailed to ridge with one 10d; c. rafter toenailed to rafter with 4 10d.



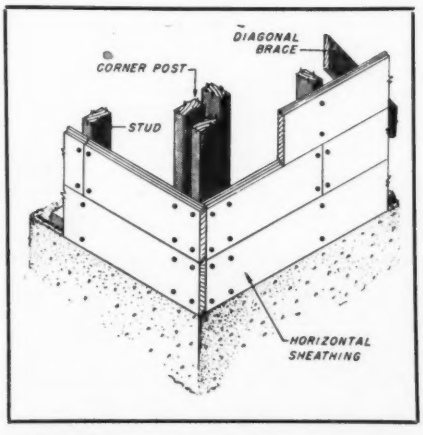
SOLE plate. Nailed through subfloor to header joist and joist with 16d nails staggered. Sole plate over end joist nailed through subfloor to joist with 16d nails space 16 inches on centers.



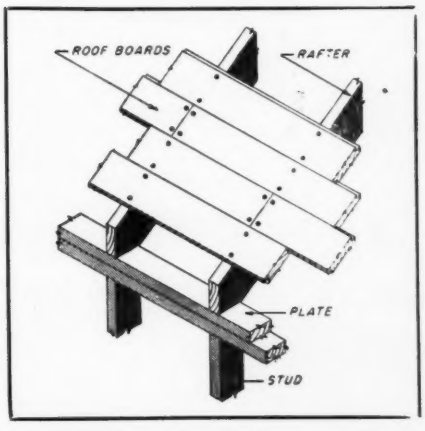
METAL strap anchorage of studs to sill. Strap not less than 22 gage in thickness by 1 inch wide nailed to inner and outer edges of sill with one nail; to outer face of studs with three 8d nails.



DIAGONAL wall sheathing. Use 8d nails. For boards 8 inches and less in width, use 2 nails at each end, 2 through each board and 3 through board into corner post. For wider boards use additional nail.



HORIZONTAL wall sheathing. Boards 8 inches or less nailed to framing with one 8d nail near edge. Wide boards nailed with 3 8d nails, one near each edge and one near the middle of the width.



HORIZONTAL roof sheathing. Boards 6" and less in width nailed to rafters with 2 8d nails; wider boards nailed with 3 8d nails. Joints in succeeding runs should not occur on the same rafter.

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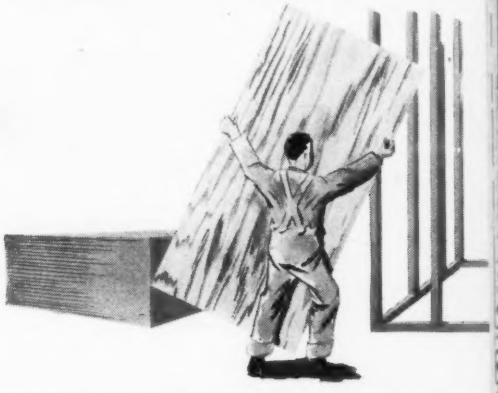

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and economy of construction—of the glued-laminated wood framing member.

Early European uses of glued-laminated construction appeared in the form of foot and canal bridges, hangars, railway shop and station-platform roofs, nursery and factory roofs. In the middle 1930's, American companies, equipped with important research findings at the U. S. Forest Products laboratory, began manufacturing wood laminated arches for a wide variety of construction, including garages, stores, recreational buildings, hangars, warehouses and many types of farm buildings. Since that time, glues and manufacturing procedures have continually improved.

CONSUMER BENEFITS, DEALER BENEFITS

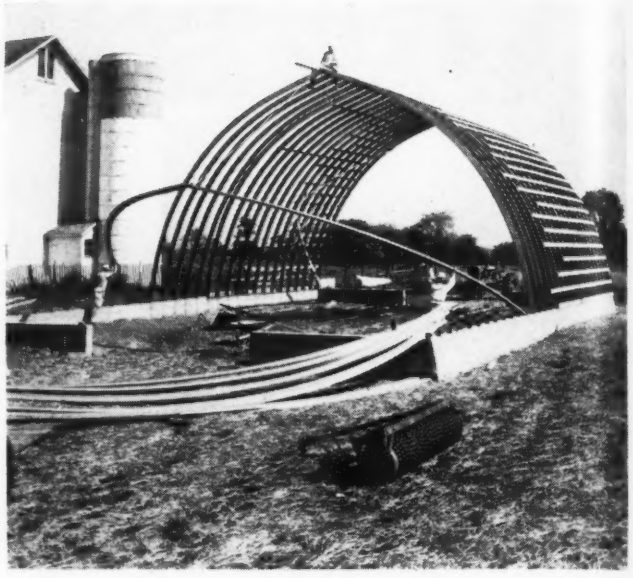
A good part of the potential market for laminated framing members lies on the farm. The farm building market now looms larger than at any time in the history of agriculture. No other industry is undergoing greater changes than agriculture where mechanization of almost every phase of farming is taking place. There are few farms on which there does not exist a need for new buildings of some kind, or modernization of present buildings.

Laminated rafters are functionally designed for and fabricated in a variety of shapes and sizes for dairy and beef barns, general purpose barns, hog houses, poultry houses, brooder houses, machine sheds, corn cribs, garages and utility buildings.

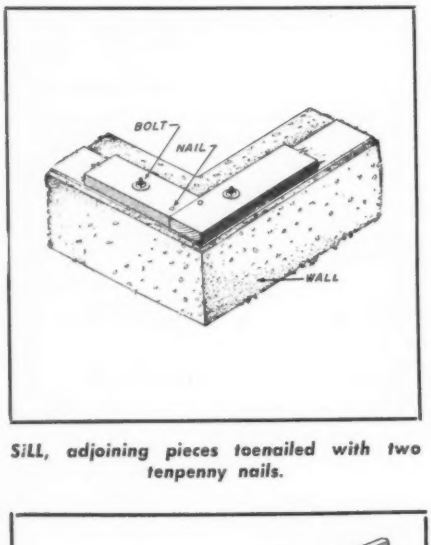
Dealers report that today many sales of glued-laminated structural members are based on the recommendations of farmers who are using them and that many farmers are not satisfied until all of their buildings are of this nature.

Local improvements, a market that in the past often has been supplied by sources other than the lumber dealer, is opened to the building products merchant. Every community offers opportunities for the use of glued-laminated framing members in new garages, warehouses, factories, indoor skating rinks and swimming pools, theaters, gymnasiums and other recreational buildings.

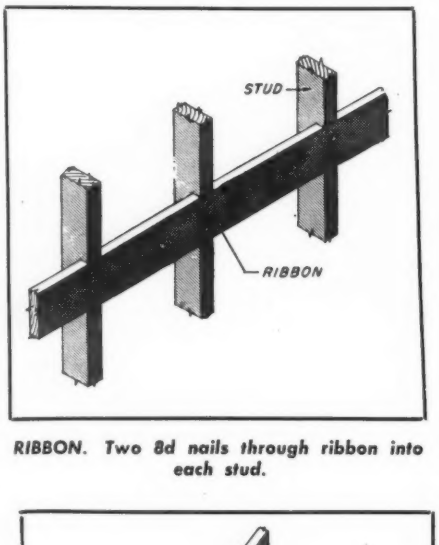
Arches and trusses used in these buildings are merchandised by some manufacturers exclusively through retail lumber dealers—so there is no need for dealers to



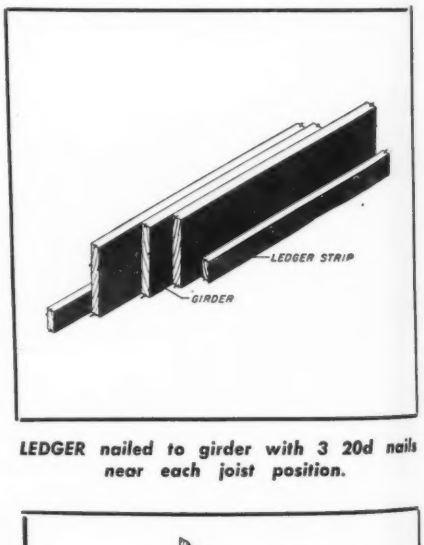
***LAMINATED** rafters for farm buildings are easily installed, capable of withstanding high stresses, and require a minimum of internal bracing. Each type is carefully engineered for the particular job it has to do.*



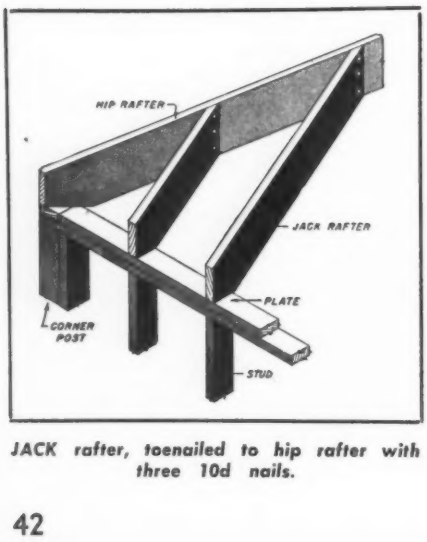
***SILL**, adjoining pieces toenailed with two tenpenny nails.*



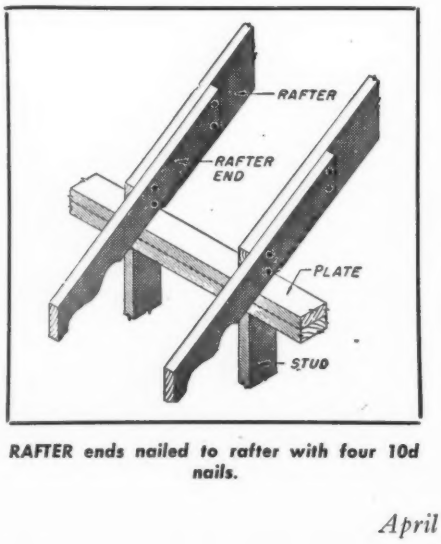
***RIBBON**. Two 8d nails through ribbon into each stud.*



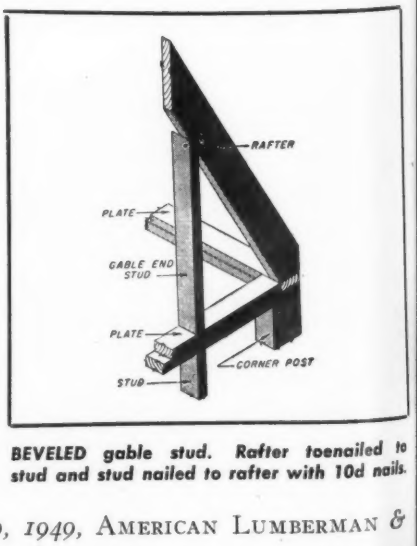
***LEDGER** nailed to girder with 3 20d nails near each joist position.*



***JACK** rafter, toenailed to hip rafter with three 10d nails.*



***RAFTER** ends nailed to rafter with four 10d nails.*



***BEVELED** gable stud. Rafter toenailed to stud and stud nailed to rafter with 10d nails.*

miss out on this important business and additional profits. With farm building, the same is true. Dealers still retain their place and are in a position to make easier and bigger packaged sales of farm buildings.

Some manufacturers maintain engineering departments and employ special field service engineers to help the dealer, builder and farmer with their building and design problems.

COMPRESSED AND IMPREGNATED LAMINATES

During the war, intensive research was conducted to find substitutes for metals. One of the most important avenues of experimentation was conducted in the field of wood and paper laminated plastics, where numerous layers of these materials were thoroughly saturated with the new types of adhesives and compressed under high pressures and heat into extremely durable and tough plastics.

Many of the products thus developed were put to immediate use in various military materials. An interesting example is aircraft ignition-system shielding of compressed and impregnated paper. Because of its high insulation qualities and the fact that it is a nonconductor of electricity, the material proved more satisfactory than any other type ever used for the purpose.

Since the war's end, the research has continued. Now there are available several varieties of panel products that have found immediate acceptance for use as table and cabinet tops, kitchen and bath wall finishing, and many other uses. Because the material is fireproof, unaffected by most acids and scalding liquids, with a surface hardness practically impossible to mar or scratch, and with a wide selection of solid or pattern colors that are absolutely permanent, the materials are excellent for any application where the above features are desirable.

These materials are available under a number of brand names. As a class they are known as **compregs, papregs,** etc.

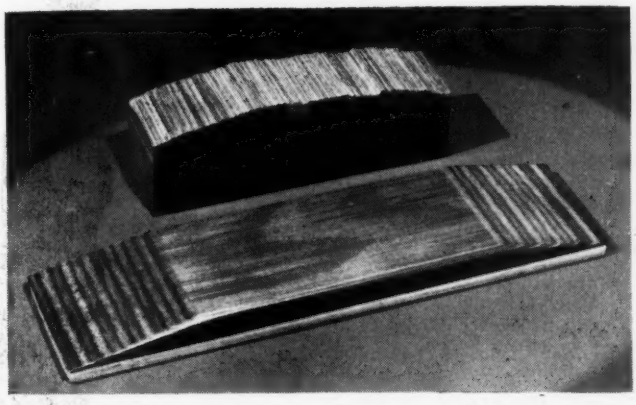
Research in other types of building products is still progressing. Some interesting previews have already been introduced that indicate there will be an ever widening scope of use for these materials.

Panels have been developed with a honeycomb fibre core and compreg or papreg faces. These have exceptionally high strength, and unusually good insulation properties. Investigations are being made to test their use as room partitioning.

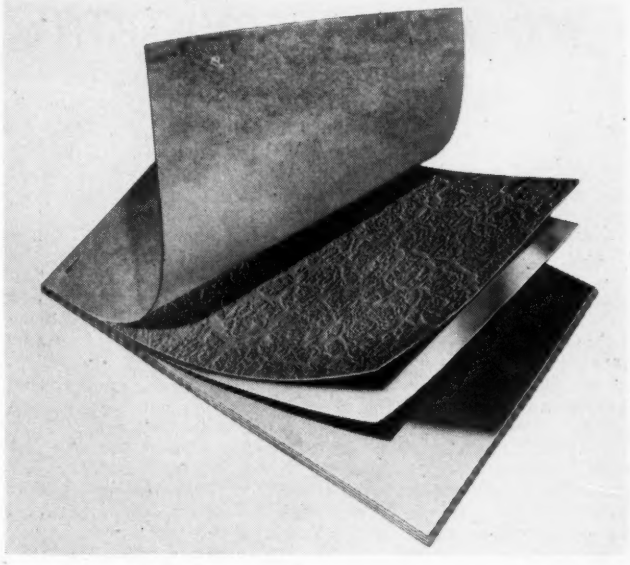
As a result of their use as flooring in freight transport aircraft during the war, other similar materials are being tested for suitability as floor covering materials in kitchens, baths, and other rooms where extreme service requirements are encountered.

Many retail building material dealers have already added the types of compregs and papregs that are used as cabinet and table tops; also as wall covering for kitchens and bathrooms. The coming few years will undoubtedly find these and other similar products firmly established as important additions to the building products field.

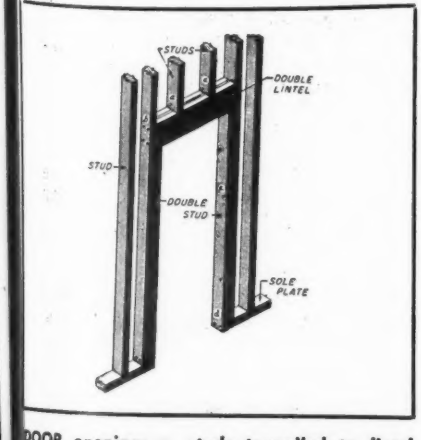
1...Lumber, Plywood, Related Items



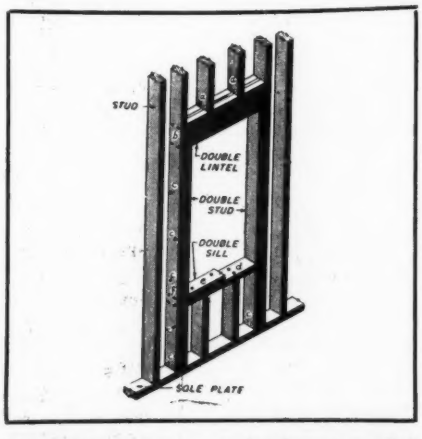
***THE FRONT** sample above is a piece of birch compreg. At the rear is an example of compressed and impregnated wood consisting of 200 individual plys. Note the beautiful finish of the birch panel.*



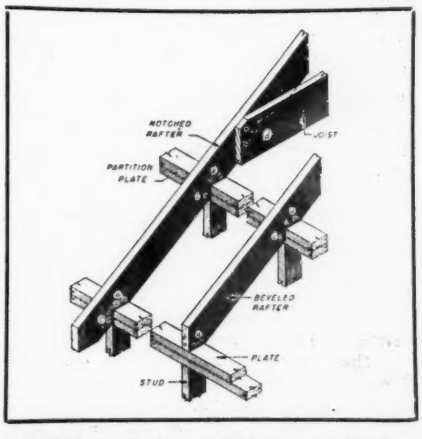
***THE ABOVE** section of Formica illustrates the manufacture of decorative plastic laminates. Reading from top to bottom are the plastic surface sheet, the pattern sheet, a layer of metal foil used in cigarette proof grades, and finally the core stock.*



***DOOR** opening; a. studs toenailed to lintel with 1 10d nail; b. long studs nailed to lintel with 2 10d nails; toenailed to plate with two 10d nails; c. double stud nailed with 10d, spaced 16"; d. studs to soleplate with two 10d nails.*



***WINDOW** opening; a. studs above toenailed to lintel with one 10d nail; b. long studs nailed to ends with 2 10d nails; c. double studs nailed with 10d nails spaced 16 inches, staggered; d. lower part of sill nailed to stud with 2 10d nails; e. upper part of sill nailed to lower with 10d; f. studs along opening nailed to sill with two 10d nails.*



***RAFTERS** notched or beveled at wall plate and notched over partition plate with ceiling joists above partition plate; a. rafters to plate with 2 10d; b. beveled rafter to plate with 1 10d; c. notched rafters to outer edge of plates with 1 10d nail on each side; d. ceiling joist to rafter with 5 10d nails.*

WOOD PRESERVATION

WHAT IS TREATED LUMBER?

THE TERMS "wood preservation" and "treated lumber" have been thoroughly mis-used, not only by the general public which has developed a growing interest in the subject, but even by lumber dealers and contractors.

Simply stated, wood preservation is a process aimed at saturating with toxic chemicals the fibre of wood—so that the fungus growths that cause decay and the termites which normally gain sustenance from wood are killed when they attempt to assimilate the treated fibres.

Decay (whether "dry rot" or dampwood decay) is many times more destructive to wood than termites are. Termites, because their damage is sometimes spectacular and because the insects themselves are marvels of ingenuity, too frequently receive more notice than does rot.

Treated lumber allows its user to utilize all the inherent natural advantages of wood without fear of destructive decay or termite attack. While the additional service to be gained from treated lumber depends upon the preservative agent employed and the method used for impregnating the wood with that preservative, service records on file with the U. S. Forest Products Laboratory show that certain types of treated lumber will last from three to five times longer than untreated lumber. For example, if decay conditions are such that an untreated piece of wood will rot out in four years, treated wood members used under identical conditions will last from 12 to 20 years. Obviously, if conditions do not foster decay or termite attack, untreated wood will last as long as treated wood.

HOW AND WHERE TO SELL TREATED LUMBER

The building products merchant who handles treated lumber is selling lumber—not an untried or strange new material. The only difference is that it is lumber with a "plus."

The dealer can best sell treated lumber by interpreting the material in terms of how the customer will benefit through its use. The farmer immediately pictures freedom from back-breaking work when the salesman tells him that he can "set and forget" creosoted fence posts. The owner of a home senses security when he is told that treated lumber "protects the danger points of his house" and that it "forms a barrier against termite and decay attack." Treated lumber is a material that offers many opportunities for creative selling—selling that makes the benefits to the customer outweigh the added price.

By using treated lumber for the vulnerable parts of farm and residential structures, the dealer can add to the value and net profit of a given package bill of materials. Compared with an ordinary structure, a portable hog house constructed with treated lumber skids and flooring offers a greater number of effective selling points, a higher net profit and a better chance to establish a lasting relationship between the dealer and the customer through increased consumer satisfaction with the unit purchased.

The dealer who urges a prospective home owner to use treated lumber for substructure items (sills, joists, bridging, foundation posts, plates and subflooring), pointing out that the material adds only two to three percent to the total cost of the house—an extremely small amount compared to the cost of replacing only a few of these items after the house is built and a cost that is hardly noticeable in monthly payments—is increasing the profit on each packaged sale and establishing a reputation for advocating sound, high-quality construction.

In many cases the dealer selling to industrials will find his market ready-made. In addition to industrial construction, architects and engineers who handle commercial and institutional construction have long been familiar with treated lumber. The material has proven its ability to reduce maintenance costs.

TYPES OF TREATED LUMBER

Method of Treatment

Treated lumber falls into several logical types, according to the method of treatment used and the general character of the preservative. Method of treatment can

WHERE TO USE TREATED LUMBER

(Based on recommendations of the American Wood Preservers' Association)

HOUSES AND FARM BUILDINGS

1. In Contact with the Ground

Footings	portable farm	Plates
Foundation	units	Posts
timbers	Mud sills	Barn poles
Skids under	Pillars	

These members should be pressure-treated with coal tar creosote (eight pounds per cubic foot, empty cell treatment), Wolman preservative salts (½ pound per cubic foot), or chromated zinc chloride (one pound per cubic foot).

2. Not in Contact with the Ground

Bridging	Pillars	Sills
Coal bins	Plates	Sleepers
Footings	Porches	Stairs
Foundation	Posts	Steps
timbers	Rails	Studding
Headers	Sheathing	Subflooring
Joists		

The foregoing members in and below the first floor subfloor should be pressure-treated with creosote (eight pounds), Wolman salts (0.35 pound), or chromated zinc chloride (0.75 pound). Creosoted lumber should not be used if the wood is to be painted, or if dairy products or other odor-absorbing foodstuffs are to be stored in the structure.

GENERAL CONSTRUCTION

1. **Process Moisture**—In buildings which house processes in which large quantities of water vapor are given off.

2. **Condensation**—In structures that are refrigerated or air-conditioned.

3. **Masonry Contact**—Where condensed moisture at wood-masonry junctures fosters rot-producing fungus growth.

4. **Outdoor Exposure**—Where rain or snow cannot evaporate fast enough from areas at joints or under fastenings.

5. **Water Contact**—Continuous or frequent contact with water (pipe, tanks, baffles in water basins, erosion checks).

6. **Ground Contact**—Where wood is partially buried or otherwise in direct contact with the soil.

be by either vacuum-pressure impregnation, hot and cold open-tank bath, dipping or brushing. The proportion of wood fibres rendered toxic to decay and termites is directly related to the type of process employed. According to the U. S. Forest Products laboratory, no process has been developed that is as effective as pressure treatment in closed steel cylinders using equipment that will withstand pressures up to 200 pounds per square inch. Effectiveness of other methods of treatment is in the order listed above, as a general rule.

The degree of protection needed determines the type of method of treatment that should be employed. For example, while the bulk of dimension stock is treated by pressure methods, finished millwork (doors, sash, frames, etc.) has long been treated with excellent results through dipping or soaking in toxic solutions. The relatively moderate penetration of preservative obtained is offset to a measurable degree by the fact that these millwork products are not used in hard service places and they are nearly always kept well painted. The film of protection is not likely to be broken except where there is actual mis-use of the product.

Chemical Preservatives

The most widely used treating agents for the dip treatment of finished millwork, as in the example noted above, are chlorinated phenol and copper or zinc naphthenate in a suitable solvent.

Chlorinated phenols are also used in pressure treating and the other methods previously noted. The preservatives used in pressure treating most of the material passing through the nation's 200 pressure-treating wood-preserving plants are coal-tar creosote (straight or mixed with petroleum), Wolman preservative salts and chromated zinc chloride. The latter two compounds are used in water solutions to treat dimension and other lumber items suitable for retail yards stocks and to produce wood, that like treated millwork, is paintable and odorless.

FIRE PROOF LUMBER

Recent developments have provided a chemical that when used as a treating solution for lumber renders it highly impervious to fire. This solution may also be used in connection with treating solutions for rot and insect attack.

The vacuum pressure method of impregnation is used to treat the lumber, and the depth of penetration determines the fire retardant quality.

In heat transmission tests, a treated door, 2¼ inch thick transmitted only 118° F in 60 minutes and 230° F in 90 minutes. Most combustibles ignite at temperatures from 400 to 700° F.

Another interesting point is that structural members of fire proof lumber retain their strength even though they may be surface-charred. Thus, maximum protection against collapse of a structure submitted to direct flame for a prolonged period is provided.

Estimates on the cost of thoroughly protecting a home against fire and decay are 3 or 4 percent of the total cost.

HOW THE DEALER CAN PARTICIPATE

The dealer can participate in the field of wood preservation in several ways. He can stock and sell pressure-treated lumber and fence posts; he can install a small treating unit of his own; or he can sell preservative solutions for dip or brush application by the purchaser.

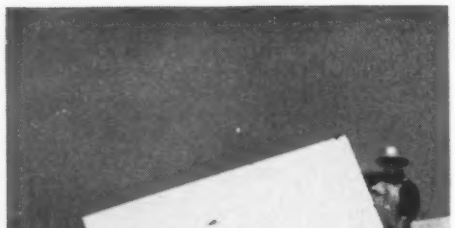
While the lack of adequate distribution facilities has hampered dealer stocking of pressure-treated lumber, except in some local areas, during the past years, expansion of processing facilities and the interest of large lumber manufacturers makes it possible today for dealers to secure both straight and mixed-car shipments of this material through their regular source of lumber supply.

Selling help from manufacturers has been in the past almost non-existent. Today the picture is changing, and as more pressure-treated lumber moves through retail channels, dealers can look to suppliers for complete promotion packages with effective selling aids.

The dealer who is interested in installing a small treating unit of his own should investigate carefully the preservative agent he will use from the standpoint of the chemical's ability to preserve wood under conditions of actual use. (Some of the proprietary salts used in large-scale commercial treatment are not available for dealers as their patent holders control the uniformity of the treated lumber produced with their preservatives by requiring that trained technical operators be employed, that certain prescribed steps in the treating process be followed, and that samples of the treating solution be sent periodically to central testing laboratories for quality-control analysis.)

WHILE all framing members of a house or similar building may well be treated, it is essential that joists, sills, or other parts that are in close proximity to the ground be effectively treated against insects, rot, and fire.

SHOWN ABOVE is a panel door that, with the exception of its faces, has been treated to withstand fire. In a 90-minute direct flame test the panel was still intact and the heat transfer was remarkably low.



Plywood

PLYWOOD IS an engineered wood board or panel consisting of an odd number of veneer sheets placed crosswise and bonded together under high pressure, with either waterproof or water-resisting adhesives, each stronger than the wood itself.

Plywoods have found numerous applications in the construction field, and are consequently a major item of merchandise for the building product dealer. It is important, therefore, that he be familiar with the various types and grades as well as their many uses and applications.

KINDS OF PLYWOOD

Plywoods are manufactured from many species of wood, falling into two main classifications; softwood and hardwood. The former type, of which Douglas fir is perhaps the most widely used, has its most common usage as a construction material; while the latter is most commonly used as a finishing material, and for furniture.

Hardwood plywoods are identified by their face, and are not necessarily hardwood throughout. It is worthy of mention also that with the development of amazing new adhesives in recent years, plastic, metal, ceramic, and many other similar faces are bonded to plywood; and their uses embrace many other industries as well as the construction field.

SOFTWOOD PLYWOOD

Douglas Fir Plywood: Douglas fir trees from virgin forests on the west coast furnish the giant "peeler" logs that are used in making Douglas fir plywood. While skill, precision, and modern machinery are essential, the transformation of the logs into either the moisture-resistant or the Exterior type of plywood consists basically of a few simple steps.

Southern Pine Plywood: Southern pine plywood is a comparatively new addition to the building products field, but it is rapidly assuming its position in the construction industry.

This product is made in the same general thicknesses and sizes as other softwood plywoods. Standards of quality have been established which insure uniformity. Its uses and applications coincide with those of plywoods of other species.

HOW PLYWOOD IS MADE

In the manufacture of cold-pressed, moisture-resistant plywood, peeler logs about 4 feet in diameter are first cut into desired lengths or bolts, usually about 8 feet long.

The bolt is placed in a giant lathe which peels a continuous thin sheet known as veneer. The veneer is then clipped to desired widths after which it is run through dryers until the moisture content is about 2 or 3 percent.

After careful grading, the veneer goes to the glue spreaders where it is assembled into panel form in stacks about 5 feet high. A hydraulic press then applies approximately 150 lbs. of pressure per square inch. The stack is clamped to maintain pressure for a number of hours until the glue is set.

Later the newly glued panels are cut and trimmed to exact size, and run through sanding machines from which they emerge as finished plywood.

Exterior or waterproof plywood is made by the hot-press process, using phenolic resin adhesives that are pressed and completely set within a few minutes by means of large hot-plate presses. These open up vertically like giant accordions, with a number of parallel, thick steel plates which are heated by steam. They provide the pressure and heat needed to change the phenolic resin adhesive into an insoluble plastic, and welding the cross-laminated veneers into large, rigid panel units, suitable for permanent weather exposure.

GRADES & SPECIFICATIONS:—

The fir plywood industry through its trade-promotion organization, Douglas Fir Plywood association of Tacoma, Wash., has established industry grade-trade

Table 1.—Interior Type Grades—Minimum Quality of Veneers

Grade	Face	Back	Inner Plies[1]	Additional Limitation (See also Sects. 8 and 9)
A-A, Int. (Sound 2 Sides, Interior)	A (Sound)	A (Sound)	D (Utility)	Sanded two Sides
A-B, Int. (Sound/Solid, Interior)	A (Sound)	B (Solid)	D (Utility)	Sanded two Sides
A-D, Int. (Sound 1 Side, Interior)	A (Sound)	D (Utility)	D (Utility)	Sanded two Sides
B-D, Int. (Solid/1 Side, Interior)	B (Solid)	D (Utility)	D (Utility)	Sanded two Sides
C-D, Int. (Sheathing, Interior)	C (Ext. Back)	D (Utility)	D (Utility)	Unsanded Grade. No belt sanding permissible
B-B, Int. (Concrete Form, Interior)	B (Solid)	B (Solid)	C (Ext. Back) (All inner plies)	Edge-sealed and, unless otherwise specified, mill-oiled. Sanded two sides.
A-A, Int. (Door Panels, Interior)	A (Sound)	A (Sound)	D (Utility)	Sanded two Sides

[1] Except center ply of panels with 5 or more plies.

marks for identification of plywood produced by participating firms. Such grademarks on the plywood assure ultimate consumers the material conforms to rigid performance standards established by the industry through the U. S. Bureau of Standards and set forth in Commercial Standard CS 45-48.

Detail Requirements

Douglas fir plywood is made in two types, Interior (Int.) and Exterior (Ext.), with the type referring to the moisture resistance of adhesives bonding the plies together. Within each type there are several grades, which are established by the quality of the veneer on both sides of the panel as hereinafter defined. The grade descriptions set forth the minimum requirements, and therefore, the majority of panels in any shipment will exceed the specification given.

Veneers.—Veneers shall be 1/12 inch or more in thickness before sanding in panels ¼ inch and thicker.

All veneers used in the different plywood grades shall be one of the following, except in center veneer of Interior Type panels with five or more plies:

Grade A (Sound) shall be of one or more pieces of firm, smoothly-cut veneer. When of more than one piece, it shall be well joined and reasonably matched for grain and color at the joints. It shall be free from knots, splits, pitch pockets, and other open defects. Streaks, discolorations, sapwood, shims, and neatly made patches shall be admitted. This grade shall present a smooth surface suitable for painting.

Grade B (Solid) shall present a solid surface, free from open defects but in addition to characteristics admitted in Grade A (Sound), veneer shall admit also neatly made circular plugs, as well as synthetic plugs that present solid, level, hard surfaces, knots up to 1 inch if both sound and tight, tight splits, slightly rough but not torn grain, and other minor sanding and patching defects. The grade shall be paintable.

Grade C (Exterior Back) may contain knotholes not larger than 1 inch in least dimension, open pitch pockets not wider than 1 inch, splits not wider than 3/16 inch which taper to a point, worm or borer holes not more than ⅝ inch wide or 1¼ inches long, knots if tight and not more than 1½ inches in least dimension, and plugs, patches, shims, sanding defects, and other characteristics in number and size that will not impair the serviceability of the panel.

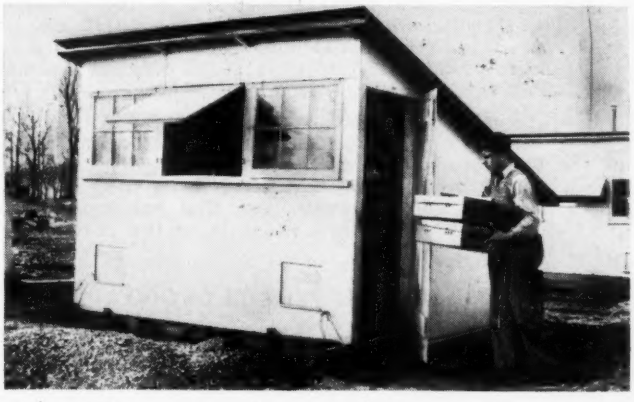
Grade D (Utility Back) (May be used only in Interior Type panels) shall contain no knotholes greater than 2½ inches in maximum dimension, no pitch pockets more than 2 inches wide by 4 inches long or equivalent area if of lesser width, no splits wider than ½ inch; splits ½ inch wide at widest point may be one-fourth panel length; those not more than ¼ inch wide at widest point may be half-panel length; and those not more than 3/16 inch wide may be full-panel length, but all splits shall taper to a point at one end. Any number of plugs, patches, shims, worm or borer holes, sanding defects, and other characteristics are permitted provided they do not seriously impair the strength or serviceability of the panel.

Interior Type

This type consists of plywood with a high degree of moisture resistance where its application requires that it shall retain its original form and practically all its strength when occasionally subjected to a thorough wetting and subsequent normal drying, a plywood suitable for construction where subjected to occasional deposits of moisture by condensation through walls or leakage or from other sources. Western hemlock, Sitka spruce, noble fir, commercial white fir, Alaska cedar, Port Orford cedar, California redwood, ponderosa pine, sugar pine, Idaho white pine, and Western larch, may be used for inner plies only, in Interior Type grades A-A (Sound 2 Sides), A-B (Sound/Solid), A-D (Sound 1 Side), B-D (Solid/1 Side), and A-A (Door Panels). Plywood of this type is available in the grades given in Table 1.

Exterior Type

This type represents the ultimate in moisture resistance, a plywood that will retain its original form and strength when repeatedly wet and dried and otherwise subjected to the elements, and suitable for permanent exterior use. It shall be free from both core gaps and core voids that impair the strength or serviceability of the panel. If a tape is used in the glue line it shall be



***PLYWOOD** has found numerous uses on the farm. The brooder house shown above is easy to construct, durable, and economical.*

Table 2.—Exterior Type Grades—Minimum Quality of Veneers

Grade	Face	Back	Inner Plies	Additional Limitations (See also Sects. 8 and 10)
A-A, Ext. (Sound 2 Sides, Exterior)	A (Sound)	A (Sound)	C (Ext. Back)	Sanded two Sides
A-B, Ext. (Sound/Solid, Exterior)	A (Sound)	B (Solid)	C (Ext. Back)	Sanded two Sides
A-C, Ext. (Sound 1 Side, Exterior)	A (Sound)	C. (Ext. Back)	C (Ext. Back)	Sanded two Sides
B-C, Ext. (Solid/1 Side, Exterior)	B (Solid)	C. (Ext. Back)	C (Ext. Back)	Sanded two Sides
C-C, Ext. (Sheathing, Exterior)	C. (Ext. Back)	C. (Ext. Back)	C (Ext. Back)	U-sanded Grade. No belt sanding permissible.
B-B, Ext. (Concrete Form, Exterior)	B (Solid)	B (Solid)	C (Ext. Back)	Edge-sealed and, unless otherwise specified, mill-oiled. Sanded two Sides

resin-impregnated. All veneer used in Exterior Type panels shall be of Douglas fir and of C (Exterior-back) grade or better. All Exterior panels shall be so designated by a distinctive symbol "Ext" branded or stamped on edge of each panel. Plywood of this type is available in the grades given in Table 2.

USES AND APPLICATIONS OF PLYWOOD

Plywood has without exaggeration been termed "the wood of 1000 uses." In the construction industry it has found tremendous acceptance as sheathing, sub-flooring, roof decking, interior wall finishing, cabinets and built-in furniture, and many other uses. Its applications are equally widespread in farm buildings and equipment.

The special waterproof grades are excellent for the fabrication of concrete forms, and for many other uses where water resistance is essential.

For the home hobbyist, plywood is a natural material with which to work, being easy to work and finish, and with the necessary strength and durability for almost any job required of it.

In the ten-year period ending with 1948, production rose from 650 million feet to two billion feet. In 1948 there were 42 factories producing Douglas fir plywood, and 11 more under construction, as compared with 21 factories in 1938.

WHAT DETERMINES GRADES OF PLYWOOD PRODUCED

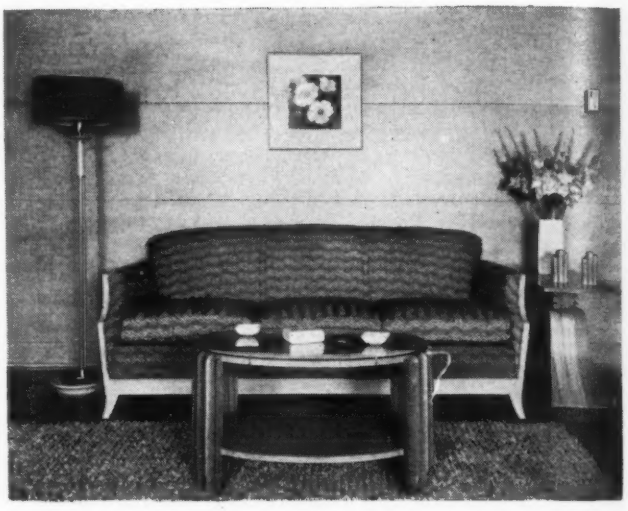
Two factors determine the grades of fir plywood; customer requirements and the raw material . . . logs. In general, grades are made to meet expressly the needs of each building or industrial application.

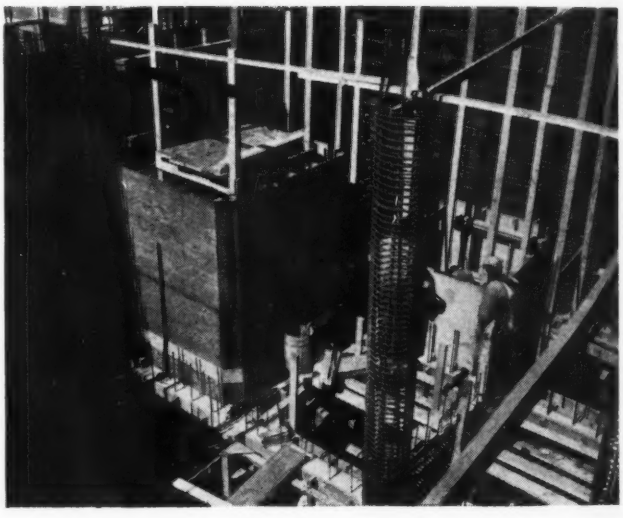
Equally important, specifications permit complete utilization of the raw material, the essence of conservation. As well, the various grades permit economical use of veneer developed from peeler logs; each grade is designed to be entirely adequate for its intended use, but not unnecessarily better in appearance than needed.

Production today is approximately 59% 3/8 inch or thinner, and 41% 7/16 inch and thicker. A total of 15.7% of the total production goes directly from manufacturer to industrial users for fabrication into freight cars, truck bodies, furniture, boats, etc. The balance is distributed through established channels to the retail lumber dealer.

THE OUTLOOK FOR PLYWOOD

There is every indication that the production capacity of plywood will be increased during the next few years. Continued product research that the industry has been conducting steadily for many years should lead to even more widespread uses and applications for plywood.





***SOFTWOOD PLYWOODS** have found wide usage in sheathing, subflooring, and interior wall finishing. They also have many applications as form materials in concrete construction.*

EXT-DFPA·A-A

EXT-DFPA·A-B

EXT-DFPA·PLYSHIELD·A-C

EXT-DFPA·UTILITY·B-C

EXT-DFPA·SHEATHING·C-C

EXT-DFPA·CONCRETE FORM·B-B

EXTERIOR-TYPE Douglas Fir Plywood PLYSHIELD GRADE A-C DFPA INSPECTED EXT-DFPA

INTERIOR-TYPE GENUINE Douglas Fir Plywood PLYSCORD GRADE C-D SHEATHING D.F.P.A. INSPECTED

INTERIOR·A-A·DFPA

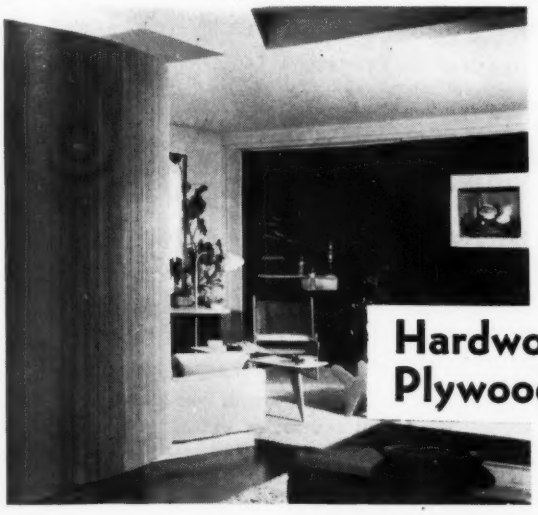
INTERIOR·A-B·DFPA

GENUINE DOUGLAS FIR PLYWOOD PLYFORM CONCRETE FORM PANEL INTERIOR-TYPE GRADE B-B D.F.P.A. INSPECTED

Douglas Fir Plywood PLYPANEL GRADE A-D INTERIOR-TYPE D.F.P.A. INSPECTED

INTERIOR-TYPE Douglas Fir Plywood PLYBASE GRADE B-D D.F.P.A. INSPECTED

1 . . . Lumber, Plywood, Related Items



The fabrication of hardwood plywood is not a new art. It has been practiced through a hundred generations by the master craftsmen of civilization. However, as with all other medieval crafts, modern engineering and scientific achievements have so improved the technique of plywood manufacture that never before has this product reached such high standards of quality and utility.

Hardwood plywood is similar in construction to the softwood varieties discussed earlier in this section. It consists of a center ply known as the core, and intervening plys laid at right angles, known as crossbands. The faces are thin layers of veneer, oftentimes of the finest types of wood grown in the world.

Hardwood plywood is not only decorative, but is relied on to give strength to the structure or object of which it is a component part. It has great resistance to splitting and has a very satisfactory nail-holding ability.

TYPES OF HARDWOOD PLYWOOD

By species, the types of hardwood plywood available include walnut, mahogany, gum, oak, birch, maple, poplar, tupelo, basswood, cottonwood, sycamore, elm, ash, aspen, beech, alder, cherry, butternut, locust, buckeye, holly, pecan, hickory, chestnut, magnolia, prima vera, satinwood, zebrawood and numerous other domestic and foreign species.

The dealer, of course, does not need to carry all of these. For example, the display cabinet shown on this page is designed to create a small hardwood department in the building materials store by stocking and displaying two pieces of 13/16-in. birch, oak, gum, walnut and mahogany plywood and 10 pieces of ¼-in. plywood in each of the five species mentioned.

SALES OPPORTUNITIES

Today, the dealer has two immediate sales opportunities for hardwood plywood; first for its many uses in construction as a decorative wall finishing material; and second, to supply the rapidly growing requirements of hobbyists and amateur craftsmen. The latter usually want to buy small quantities, but their demand is constant, and they pay cash for their purchases.

The dealer who becomes thoroughly familiar with the available types of hardwood plywoods, how to work and finish them, how they may be used to fashion a wide range of home accessories, and conveys this information to his customers, will create a large and steady volume of business; for working with hardwood plywoods has a fascination that few hobbyists can resist.

The beautiful grains and textures found in modern hardwood faces are obtained by various methods of cutting the veneer; the method used for each log depending on the particular grain desired.

Rotary cutting is familiar to all. It is the method used to cut logs for softwood plywood and consists of mounting a length of log on a large lathe and turning off a continuous thin layer of veneer. Other methods of cutting veneer are the half-round rotary, back-cutting on rotary, flat slicing, quarter slicing, and sawing. Each is used in its proper place to bring out the maximum grain beauty from a hardwood log.

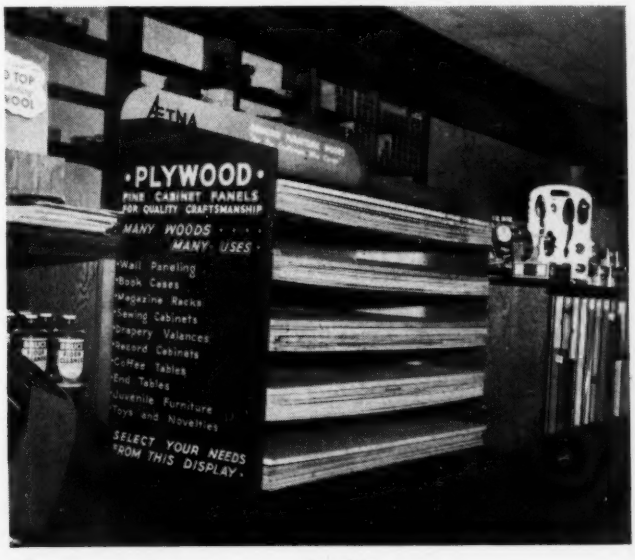
SPECIAL FACINGS AND OVERLAYS

Facings and overlays for plywood are of very recent origin. Such specialized plywood is just now beginning to find its way into the merchandising programs of more aggressive lumber dealers. By the use of facings and overlays, the plywood manufacturer has overcome some of the limiting characteristics of conventional plywood thereby offer the dealer an opportunity to sell plywood for many new uses.

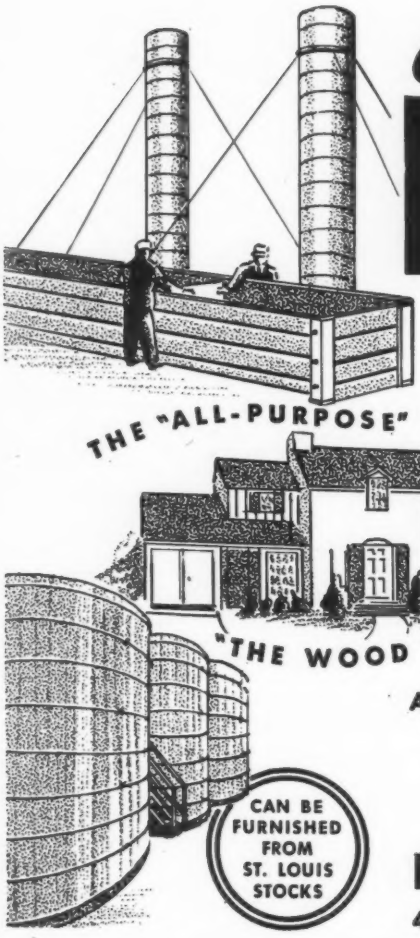
Facings and overlays in use today are of the following types:

1. Paper material impregnated with resin.
2. Face veneer of wood of a species other than that used for the major portion of the plywood.
3. Plastic sheets of non-wood material.
4. Metal sheet material.

The above overlays are used to gain certain of the following: resistance to hair line checking and grain raising, greater wearing qualities by resistance to abrasion, fire resistance, washability and resistance to stain, imperability and decorative effects through a special finish or color.



***IN ADDITION** to selling hardwood plywood from the handy store cabinet shown at the right, many dealers are paneling their offices and sales areas to demonstrate the beauty of this product as a wall surfacing material.*



Check these Points — THEN RECOMMEND

Tidewater
RED CYPRESS

TERMITE RESISTANT (naturally resistant to termite destruction according to the U. S. Department of Agriculture.)

DECAY RESISTANT (Nature has done for Tidewater Red Cypress what man has tried to do for other woods through artificial induction of preservatives.)

STRUCTURALLY STRONG (General strength lies between light and heavy pines. Structural grades of known strength and stiffness are available.)

NATURAL GRAIN (Natural grain and texture lends beautifully to interior panneling and finishing.)

EFFECTIVE FINISHES (Takes all stains, paints or enamels. No departure from standard finishing procedure required.)

Always available in the size you require from "small stuff" to timbers

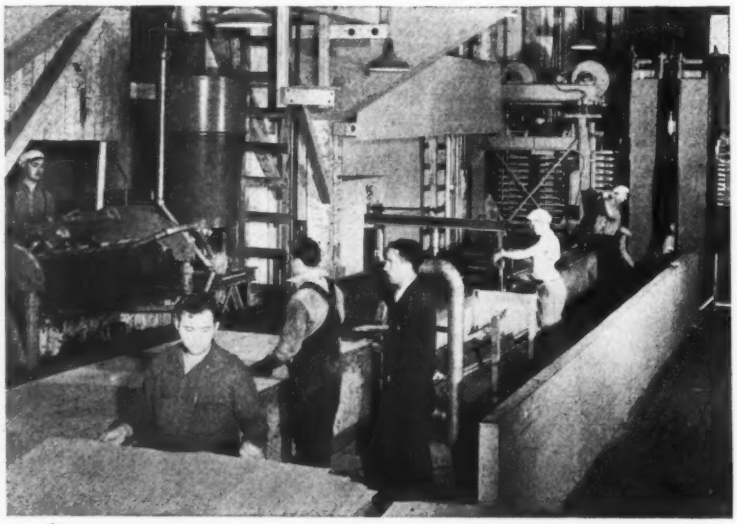
WE ALSO INVITE INQUIRIES ON FULLY OR PARTIALLY FABRICATED TANKS AND VATS

Tidewater Red Cypress "The Wood Eternal"

RED CYPRESS

FLEISHEL LUMBER COMPANY

4243 DUNCAN AVE. • ST. LOUIS 10, MO. • NEwstead 2100



One of the continuous production lines at the West Coast Plywood Co.

TRU-BILT
EXTERIOR
PLYWOOD
100% HOT PRESSED

TRU-BILT METHODS MEAN HIGH UNIFORM QUALITY

● TRU-BILT is a resin-bonded, waterproof plywood manufactured by an exclusive West Coast Plywood Company process to meet all weather conditions. Rotary cut veneer from selected logs moves through a special spreader, along a continuous assembly line, into a stacker and synchronized loader and hot press. Skilled operators and careful multiple inspection assure constant uniformity and high quality. For finest exterior plywood, specify TRU-BILT.

WEST COAST PLYWOOD CO.

Aberdeen, Washington

MANUFACTURERS OF 100% HOT PRESSED PLYWOOD

Section 2

Metal Products

Metal building products are assuming an ever-increasing place in the construction field; not particularly as replacement materials, but in a constantly expanding variety of new products, designed especially to provide better service or added comfort and convenience in the home.

The ability of American industry to fabricate and work metals of all kinds into almost any kind of an object, and to produce them in tremendous quantities, has added much to the high standard of living that we are privileged to enjoy. With hundreds of metal products, manufacturers concentrating their designing ingenuity and their production know-how to the construction field, it is small wonder that such a wide variety of items is available to the building industry.

As suppliers of building materials of all kinds, dealers have witnessed the steady development of metal products and have adjusted their inventory, handling, and merchandising programs accordingly.

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Interior Decorative Metal Products 96
Estimating Plans 101
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Tips for Salesmen 106
Increasing Dollar Sales Volume 106

TYPES OF METAL BUILDING PRODUCTS

Metal building products fall generally into three broad classifications: structural, functional, and decorative or ornamental. In the first group are those items that are incorporated as a structural part of the house or building, girders, lally columns, metal framing or siding members, sash, flashing, etc.

In the functional group are such units as metal fireplaces; coal, dust, or clothes chutes; mail boxes (built-in), and many other assemblies that may be added to a structure for a specific functional purpose.

In the classification of decorative or ornamental materials are mouldings and trim, ornamental iron work of all kinds, fireplace equipment, etc. A major number of these items also serves a functional as well as decorative purpose.

It is rather difficult to draw a decisive line of definition between what constitutes metal products of a structural and functional nature and certain items that are generally considered as hardware. Since there is such a close integration of such products, some may be more completely covered in Section 5 of this book, devoted to Hardware.

ALUMINUM AS A BUILDING MATERIAL

Possibly the fastest growing trend in the building industry today is toward the increased use of aluminum. As a building material, aluminum has a multitude of significant values that are highly desirable. It is very light, will not rust, and may be fabricated to incorporate great strength. With aluminum only the metal thickness actually dictated by loading values is needed, without any allowances for rusting.

Aluminum surfaces reflect as high as 95% of the radiant heat striking them. This makes it a spendid roofing material. It is amazingly light; a six foot length of corrugated aluminum .024 inch thick and 26 inches wide weighs only 5 pounds. It requires no maintenance, but if a painted surface is desired it takes paint very well.

Aluminum is also non-toxic and will not contaminate water that flows over it. If properly grounded, aluminum roofing provides effective protection against lightning. And of primary importance, aluminum is comparatively inexpensive.

Aluminum Roofing and Siding: Aluminum roofing is available in corrugated sheets, in 2⅔ inch and 1¼ inch corrugations. The most popular width and thickness is 0.024 inch x 26 inches, and the sheets are supplied in 6, 8, 10, and 12 foot lengths. Accessories such as ridge roll, formed valley, roll flashing, are also available.

Crimp roofing, interlocking sheet roofing, and individual formed shingles are also made of aluminum. These latter products are made to provide a deep shadow line at the base, and are laid in an alternating pattern the same as other shingles.

Aluminum siding has been on the market for some time both in sheet and clapboard style, the latter type providing a traditional colonial finish to a home. It is made with an 8-inch exposed face in 12-foot lengths, and may be obtained with either a plain, smooth surface or a special mechanically textured surface.

Erection is easy and fast. A starter strip is nailed

flat against sheathing or studs, and the rest of the siding is automatically aligned by this strip. Special corner caps are applied as corners are reached.

Also available is a weatherboard siding, aluminum sheets with 24-inch vertical coverage and a length of 8, 10, or 12 feet, erected horizontally so the rows of 4 inch exposed surface run horizontally and look like conventional clapboard.

Aluminum Structural Members: Use of aluminum angles, channels, and extruded sections, as well as continuous-roll-formed strip is also expanding greatly. Already certain sections have been standardized for studs, roof trusses and various other structural framing and supporting members.

Air Ducts: One of the most important shifts in materials has been the widespread adoption of aluminum for air ducts in heating, ventilating and air conditioning systems for both homes and commercial structures. With the slightly added cost of the metal (approximately 6½% more than commonly used materials), there are certain advantages that make it worthy of serious consideration.

Greater heating efficiency comes from aluminum's lower heat radiation power and smoother surface, cutting actual BTU loss and permitting air transmission with a minimum of power.

Aluminum has also become quite popular for the fabrication of windows, hardware, and numerous items. For further information refer to Section 3, Windows, Doors, Millwork; and to Section 5, Hardware.

STEEL BUILDING PRODUCTS

Steel in various forms has contributed many important products to the light construction industry for many years. Most of these the retail material dealer has supplied to his contractor customers, and many are kept in constant inventory.

Among the most important of these, and their uses are:

Angle irons—for window and door lintels—fireplace arch supports, usually 3x3" in 3'0", 3'6", and 4'0" lengths.

"Lally" columns or girder supports: 4" diam. with bottom and top plates 7'0" and 7'6" lengths.

Adjustable or screw-type girder supports in 7' lengths.

Joist hangers—or "stirrups"—to support joist ends where they contact girders and headers—furnished in single, double, and triple joist thicknesses, and to accommodate 2x8", 2x10", 2x12", 3x8", 3x10", 3x12" joists' depths and widths, also saddle type (which "straddle the girder and supports joists on two sides)

Coal chute wall inserts.

Basement sash and frame assemblies 3 Lt. approx. 8x10" glass size (unglazed).

Clean-out doors—10", 12"—to install at base of flues or ash pits.

Ash dump assembly for fireplace hearths.

Fireplace dome dampers.

Heat saver fireplace forms—with ducts and grilles.

Basement window areaway surrounds (stock sizes to fit basement sash.)

Basement entrance door assemblies.

Milk or parcel receiving built-in units.

Incinerator units (built-in.)

Incinerator units (portable.)

"Bell Traps" for basement and garage floors to connect floor surface with drainage system—and protect against fumes—furnished to fit 3" and 4" pipe.

Clothes poles—7'.

Sheet metal products (steel) galvanized finish.

Sheet Metal Products (Steel) Galvanized Finish

Gal. 24x96" plain sheets (26 gauge.)

Galv. 24x96" corrugated sheets (26 gauge) 1¼" corrugations—full width 26" covering width 24"—8' lengths.

Corrugated Ridge roll—2" roll—4" apron—26" lengths.

Plain Ridge roll—2" roll—26" lengths.

Galv. Roll Valley (26 gauge) 16" width—50' rolls.

Eaves drip edging—1x1x4"—10' lengths.

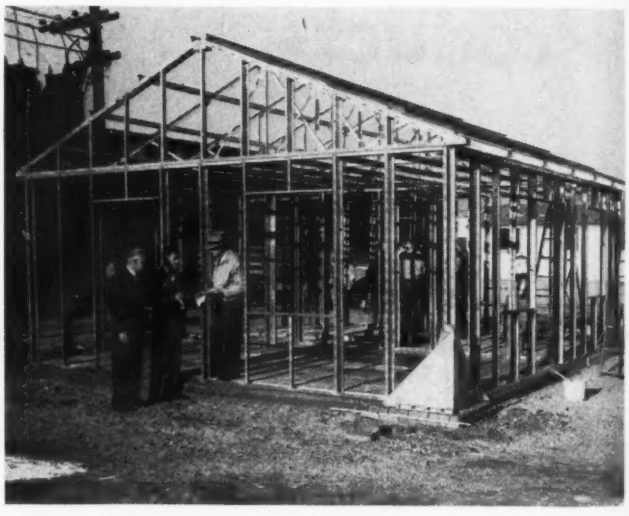
Rake roll—1x2"—10' lengths.

Flashing shingles—5x7".

Metal corner miters for siding application (reversible for inside or outside corners) 6", 8", 10".

Exterior metal corner bead for stucco—or asbestos shingle siding—10' lengths—20 pcs. per bundle.

Finials—(for end of ridge cap.)



CONSIDERABLE development has been done with metal in the fabrication of framing members. At the top, a steel wall frame is being set in place. Below is a completely framed structure using aluminum framing members.

Window casing moldings for stucco or siding application (with miters) 10' lengths—500 lin. ft. per crate.

Access door assemblies — for plumbing, heating and wiring service centers—stock size 13x17" hinged.

Furnace pipe (lock joint-nested) 26 gauge—2' lengths—5", 6", 7", 8" diameter.

Furnace pipe elbows—45°—90° adjustable.

Furnace pipe casing collars.

Furnace pipe tee joints.

Furnace pipe dampers.

Ventilating louvres—8x12", 12x12", 8x16"—with rustproof screen back.

Metal wall ties for veneer masonry.

Pressed steel mail boxes—house attached or box type.

Pressed steel mail boxes—rural—post secured box with flag indicators.

Picture mold inserts in plaster walls 10' lengths.

Base screeds—½" grounds—in plaster walls—10' lengths.

Solid wing corner beads—small nose.

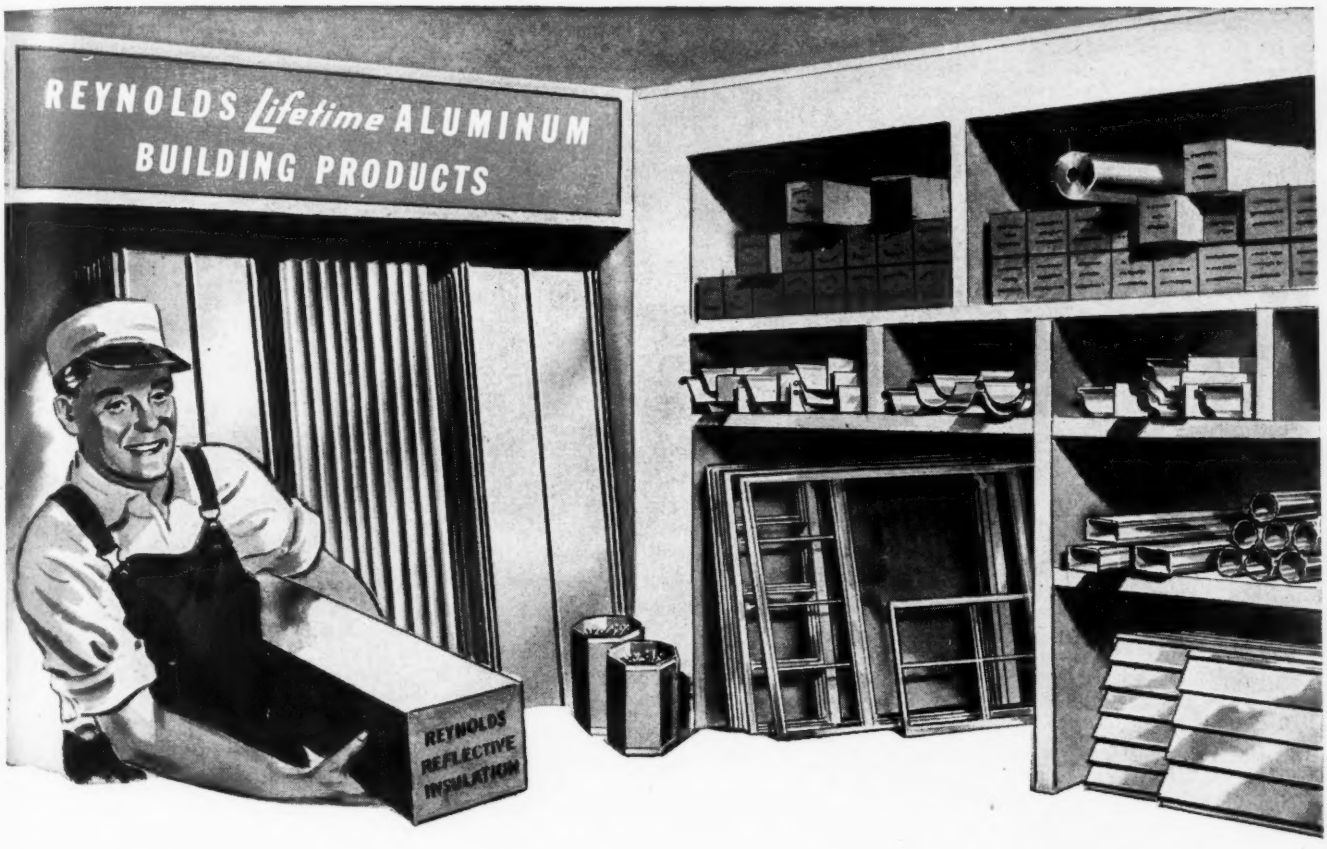
Solid wing corner beads—bull nose.

(Furnished in 7-8-9-10 and 12' lengths—500 lin. ft. per crate)

"Tin" or "Terne" Coated Steel:

Valley flashing—10" and 14" wide—paint both sides—furnished in 50' rolls.

Roofing—flat plates for porch or deck roofs—size 20x28"—25 lb. coating—packed 112 sheets per box—(approx. 400 sq. ft. coverage.)



Put them all together

...they spell profits

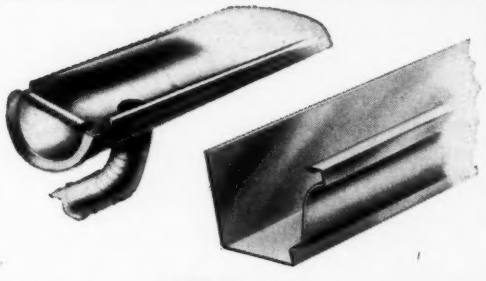
Cash in on Aluminum's natural display value... set up a special Aluminum Department. In showing the complete line, you show the *bigness* of aluminum in the building business... and each product helps you sell the other. Your reflective insulation demonstrates the heat-reflective advantages of aluminum roofing and siding. Gutters sell the rust-proof permanence of all aluminum... and at about half the price of other non-rust gutters. The popular demand for windows helps sell the entire line. Even your accessories—nails especially—become a profitable repeat business. Ask your Reynolds representative to help you set up a sales-building, money-making Aluminum Department. **Reynolds Metals Company,** Building Products Division, Louisville 1, Ky.

New Stipple-Embossed
Corrugated, 5-V Crimp
Snap Seal Roofing
Weatherboard Siding
Reflective Insulation
Built-Up Roofing
Windows
Industrial Corrugated
Alumi-Drome
Architectural Shapes
Nails, Flashing,
Complete Accessories
Residential Casement,
Fixed and Picture Windows

WORLD'S LARGEST PRODUCER OF ALUMINUM BUILDING PRODUCTS

IF YOU SEE RUST YOU KNOW IT'S NOT ALUMINUM

REYNOLDS *Lifetime* ALUMINUM BUILDING PRODUCTS



REYNOLDS *Lifetime* ALUMINUM
Gutters and Downspouts

Beautiful stipple-embossed finish on O.G. or half-round, also half-round plain. Write for descriptive folder.

MAIL THIS COUPON

Reynolds Metals Company 4
Building Products Division,
2002 South Ninth Street, Louisville 1, Ky.

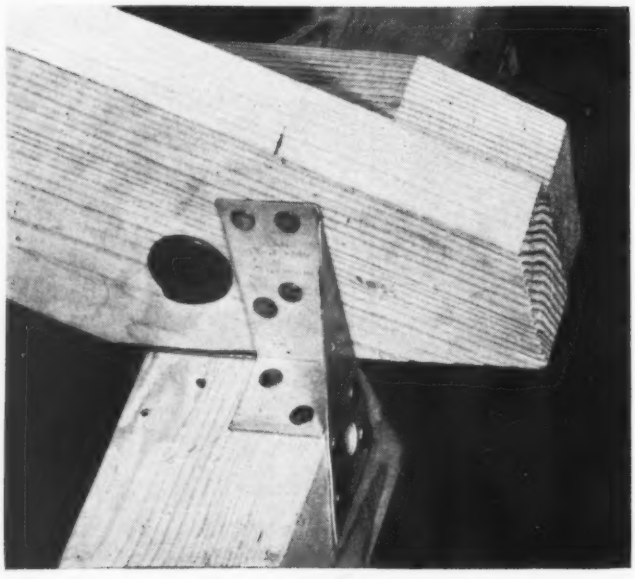
Tell me more about your Aluminum Department set-up. My Jobber's name is_____

_____

My name_____

Address_____

City_____ Zone____ State_____



THE metal framing anchor shown above is one of three types available for house and farm building framing. These, together with ring timber connectors for truss assemblies, offer new time and materials savings in wood framed buildings.

Gutter or eaves trough hangers (strap type) for 3", 4", or 5" eaves trough.

Gutter or eaves trough hangers—malleable adjustable shanks—3", 4", or 5" eaves trough.

Leader clamps for 3" and 4" dia. leaders.

Strap type.

Clamp type.

Ornamental type.

"Blued" stove pipe—28 gauge 3", 4", 5", 6" diameters—2' lengths—100 pcs. per box—(stock 3", 4", and 5".)

Corrugated 90° elbows—each size.

Adjustable sectional elbows.

Flue size reducers—6" to 5"—6" to 4"—6" to 3".

Dampers—for stove pipe.

Stove pipe collars.

Contractors' Metal Products Equipment Items:

Mortar boxers (assorted sizes.)
Mortar tubs.
Mortar hods.
Scaffold brackets.
Ladder brackets.
Roofing brackets.
Wheel barrows.
Water pails (galvanized) 8-10 qts.
Mortar pails (galvanized) standard.
Hoisting pulleys (well wheels.)
Hoisting devices (block and fall.)
"Crow" bars—6', 7', 8'.
"Pry" or wrecking bars—18", 24", 30".
(For hoes, spades, shovels, and mechanics' tools, etc., refer to Section XI.)

Household Metal Items:

Coal hods.
Fire baskets.
Andiron sets.

Nailable Steel: A recent development in the metal building products field is the production of steel framing members for homes and commercial buildings. These include studs, joists, rafters, etc., and they are so designed that flooring, sheathing, or decking may be applied by nailing. Such framing construction has great stability, and can be erected quickly and efficiently.

While this method is comparatively new, several large housing developments in the United States that have been completed during the past year, have employed this type of framing with exceptionally satisfactory results.

2...Metal Products

Metal Products—for special order

Ornamental Products

Wrought iron railing for stairs—porch rails, etc.
Weathervanes
Lamp posts
Fence posts and gates
Flag poles

Structural Products

"I" beams for girders, etc.
Channel for girders, etc.
"T" section for girders, etc.
Steel fabricated framing—plain
Steel fabricated framing—with nail grooves
Steel junior beams
Steel partition studs
Steel partition plates
Steel partition jambs

Heating and Furnace Products

(See Section 10 for Related Items)
Furnace jackets
Furnace bonnets
Warm air ducts—horizontal
Warm air wall stacks—vertical
Warm air wall stacks—fittings
Warm air boots—offsets, etc.
Warm air floor registers
Warm air ceiling registers
Warm air wall or base board registers

Metal Siding, Roofing, and Misc. Products

(See Section 8 for Related Items)
Metal roll roofing
"V" crimp roofing
Brick face siding
Rock face siding
Beaded siding
Skylights
Ornamental metal ceiling
Ornamental metal cornice
Steel wall tile
Rotary roof ventilators

TIMBER CONNECTORS

Timber connectors and metal framing anchors are unique, highly engineered metal devices that permit the more economical and efficient joining of wood framing members in a house or farm building. While not new to the industry, their use and applications are rapidly broadening. They lend themselves admirably to pre-assembly techniques, as proved in the experiments conducted with the Industry Engineered House.

Timber Connectors: The most common type of several available connectors is the split-ring type. Its widest use is in truss assemblies, and by using the connectors to join the truss members together, considerable strength is added to the assembly.

The split ring connector is installed by means of a special tool that cuts a circular groove half the depth of the connector in each of the members to be joined. The two members are held together by a single bolt and nut through the exact center of the ring.

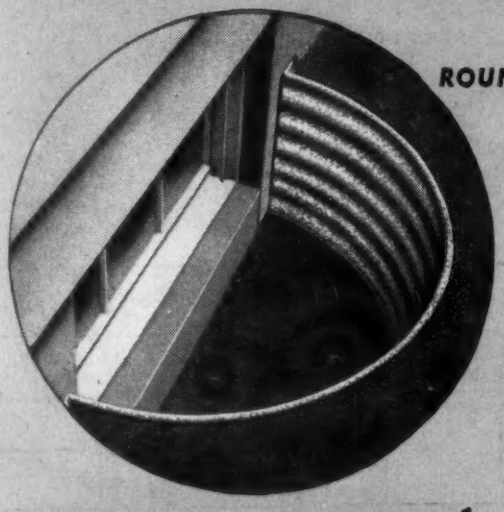
Framing Anchors: The photograph of the metal framing anchor in this section shows one of its primary functions. These simple devices speed the installation of truss rafters, studs, headers, corner posts, and headers.

For example, when spaced on the cap plates of the house walls in advance, they permit the erection crew to raise the truss in place, push it against the framing anchor, and fasten it securely in place by means of a few nails through the pre-drilled holes in the anchor. Not only is the truss quickly and accurately installed, but the roof is secured against uplift due to high winds.

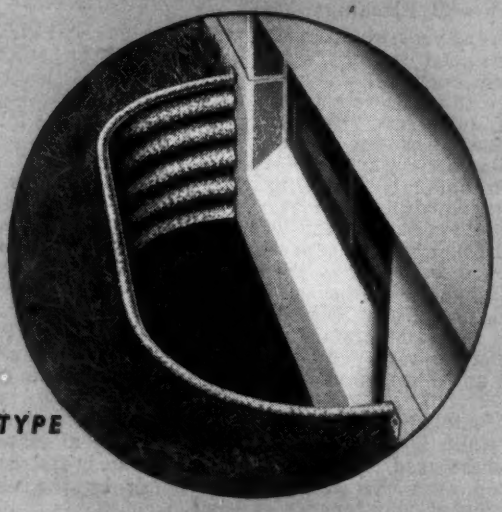
In their several applications, these anchors eliminate weakening of framing joints due to improper toenailing; they provide added frame strength at all points where they are used; they eliminate notching and shimming of joists; they increase frame rigidity around openings and corners; they anchor rafters more securely to plates; they develop both shear and tension resistance; and they reduce internal wall plaster cracks.

The anchors are made of zinc coated steel to resist corrosion. All are supplied with the special nails used in their installation.

BRAINARD Brite-Lite AREAWALLS



ROUND TYPE



STRAIGHT TYPE

BRIGHTENS *your* BASEMENT

Better designed — easier to install — better looking and safer, the new Brainard Brite-Lite Areawall comes in two styles and all standard sizes.

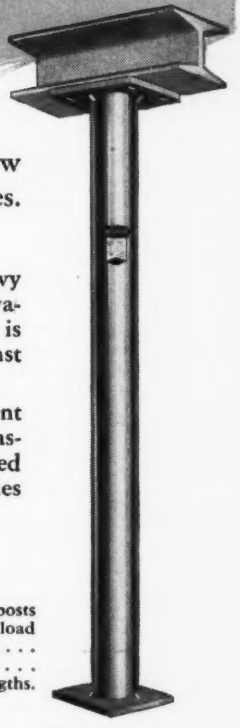
Check these Brite-Lite Features

✔ ***Better Design*** — Brite-Lite is specially designed to reflect a maximum of light into the basement. A bright long-lasting mirror-like finish that requires no paint assures brighter basements.

✔ ***Safer*** — Brite-Lite is constructed of a single piece of metal. No bolts, welds or rivets to fail. And Brite-Lite rolled top edge and special corrugations adds rigidity—increases durability.

✔ ***Stronger*** — Brite-Lite is made of heavy gauge copper-alloy, rust resisting galvanized steel. New ductile steel that is strong — permanent and safe against freezing and thawing.

✔ ***Easier Installation*** — The wall attachment flanges of Brite-Lite are flattened to assure tight anchorage. Holes are punched entire length of flange with top holes elongated for bolts or lag screws.



TEL-O-POST is the original all-steel adjustable jack post. When adjustable jack posts are needed . . . buy TEL-O-POST.

SHARONSTEEL

Brainard Steel-Strong fixed length posts are available in single posts or carload quantities. They are easy to install . . . fit either wood or metal beams . . . and come in a wide variety of lengths.

BUILDING PRODUCTS DIVISION

BRAINARD STEEL COMPANY

WARREN, OHIO Dept. 349

See Brite-Lite at your Building Supplies, or Hardware Dealer. Write for literature.

I would like to know more about Brite-Lite Areawalls.

BRAINARD STEEL CO., Warren, Ohio Dept. 349

Name .....

Address .....

City ..... *Zone* ..... *State* .....

FLASHINGS

The penetration of water through roofs and walls presents one of the major problems faced by architects, engineers and builders. The most effective means of providing protection against such penetration is by the installation of flashings of copper sheet and strip.

The various points at which flashings are customarily installed in good construction work are: open valley; closed valley; chimney; ridges and hips; vent pipe; roof and wall intersections; windows.

Details of flashings for ridges and hips, and vent pipe flashing are illustrated at the right.

Through-wall Flashings

In recent years, building designers include specifications for embedded through-wall flashings at such points as spandrels, cornices, copings and belt courses. Other points at which through-wall flashings have proven effective are: window lintels and sills, parapet walls, chimneys and intersections of walls and roofs such as found on a promenade tile roof or a pent house wall.

Sheet copper is frequently specified for flashings, gutters and downspouts because it combines the attributes of durability, beauty and economy. The principal reason for the long life of copper is the fact that this metal develops by exposure to the elements a protective coating called patina, characterized by a soft green color.

Hot rolled copper with its relatively softer temper is suitable for valleys, flashings and roofing sheets. Where additional strength and stiffness are required, such as gutters and downspouts, cold rolled copper is frequently used.

Manufacturers of copper flashings, gutters and downspouts claim it is one of the most economical materials that can be used, since the slightly higher initial cost is amortized over the life of the building by the virtual elimination of maintenance expense.

Complete information regarding the proper application of sheet copper for roofing and other uses in building construction is available from the Copper & Brass Research Association, 420 Lexington Ave., New York 17, N. Y.

Both galvanized and copper troughs and fittings are regularly supplied in two types of connecting joints:

The "lap joint"—(which is soldered on the job)
The "slip joint"—(which eliminates solder)
Leaders, "down spouts", or conductor pipe is supplied in "plain round", "round corrugated", and "square corrugated"—in both galvanized iron and copper.
"Round" types come in 2", 3", 4", 5", and 6" diameters; "square" types, 1¾x2¼"—2⅜x3¼"—2¾x4¼", etc.—with each of these, approximate fittings; i.e., "ells", "sweeps", and "shoes" are required for each size and pattern—and either in galvanized iron or copper.
Ornamental conductor "heads" and ornamental straps; also conductor fasteners—either round, corrugated, or square—of tinned malleable iron are required.

To prevent clogging from leaves, etc., conductors are fitted with wire strainers—either copper or galvanized—either square or round—in several sizes.

Dealer's procedure:—in view of the many alternatives, the simplest method of handling appears to be a display board on which the several sizes of trough—conductor pipe—and fittings can be attractively mounted.

Any plan can be quickly analyzed to find the amounts and sizes required—and after the pattern and metal have been selected, the required units can be ordered as a "package" shipment from the approved sheet metal distributor.

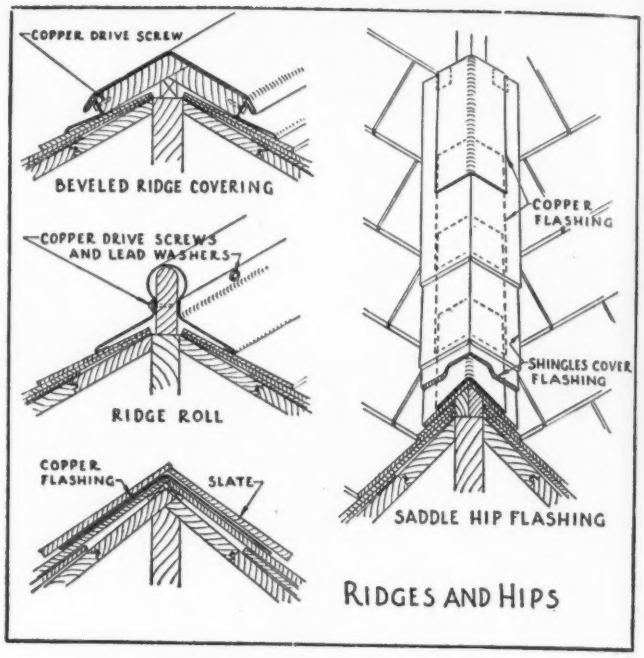
When preparing the "take off" sheet, care should be given to insure that either "lap joint" or "slip joint" is ordered throughout; likewise the sizes of fittings—number of inside and outside miters—end caps—outlets, etc.

Under "Technical Data for Salesmen," typical instructions for "take off" are given in detail.

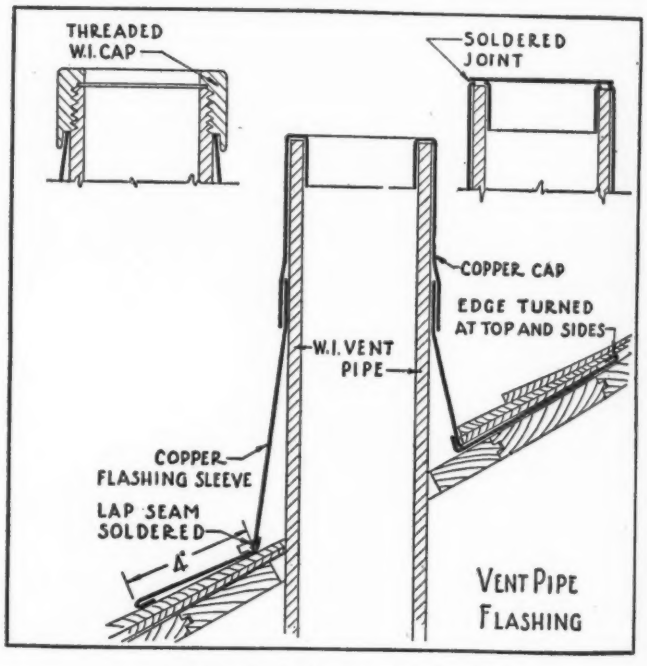
INTERIOR DECORATIVE METAL PRODUCTS

Metal Mouldings and Trim—

Metal mouldings—these are supplied in several types, and depending on available sources or the pattern now in use in the counter cabinet Millwork Department—should determine which style and material should become "stock".



DETAILS of flashing for ridges and hips.



VENT PIPE flashing is shown here.

Decorative mouldings are made of either—
Rolled shaped steel—stainless
Rolled shaped steel—chromium plated
Rolled shaped steel—"snap on" mouldings (either chromium plate or stainless)
Rolled aluminum
Extruded aluminum

Metal "wood core" mouldings—either brass, aluminum, stainless, or chromium plate members—where thin metal shaped patterns are mechanically embedded and secured to a wooden core filler.

Zinc mouldings used primarily for exterior application on existing homes where asbestos siding or asphalt siding shingles are applied over old walls. They are supplied in two patterns—
Inside and outside corners
Frame strips for doors and windows

Interior decorative mouldings are designed for many applications among which are:
"Cap" mold for covering type edges of board products.

(Continued on page 101)

ORNAMENTAL iron has wide usage in the light construction field, both for internal and external application. The beauty and charm of the above stair railing may also be achieved by using wrought iron gates, fences, porch railings, grills, and other decorative items.

Inside and outside corners—for walls—sink back splash, etc.
"Divider" or joint strips where two sheets are joined.
Fabricated rolled sink rims to effect seal between sink and counter top.
Counter edge—plain or "bull nose" for edge finish on linoleum tops.
Stair tread nosings.
Stair tread coves.
Recessed mouldings which provide space for decorative matching linoleum strip inserts.
Bathtub edge.

Because of these many variations and also by reason that they are not an immediate requirement, the logical procedure would appear to be the mounting of the various members on a display board; and, after the customer has expressed his preference as to style and type of metal, to analyze the plan and prepare an order to the distributor.

In doing the above, resolve plan lengths into total linear feet of each pattern and write order to nearest larger number of stock lengths—to allow for cutting and fitting waste—and also because very short ends are seldom usable.

However, for small jobs or "over counter" sales, a limited stock of one type or pattern may well be kept as an inventory item. This could consist of:

Standard cap moulding.	8'0 or 12'0 lengths	20 pcs.
Joint strip—or divider..	12'0 lengths	20 pcs.
Cove	12'0 lengths	20 pcs.
Inside corner	12'0 lengths	20 pcs.
Outside corner	12'0 lengths	20 pcs.
Counter edge	12'0 lengths	20 pcs.
Stair tread moulding...	12'0 lengths	20 pcs.

Packaging by manufacturers in long cardboard or fiber tubes affords convenience in handling—storing—and protection of stock.

Misc. Steel Structural Products for sectional samples and display:—
(See Windows, Door and Millwork Dept. Section 3)

Description	Sectional Samples	Pictures Catalogs
Casement windows—steel	v	v
Casement windows—bronze	v	v
Casement windows—aluminum ...	v	v
Double hung windows—aluminum	v	v
"Kalamein" firedoors and frames		
"Terne"	.	v
Sectional stair units—steel	v	v
Screen door guards—steel	v	v
Screen door guards—bronze	v	v
Screen door guards—aluminum...	v	v
Store front sections—aluminum...	v	v

Metal Products for Farms:—(See Farm Dept. Section 12.)

2...Metal Products

Estimating Plans—In estimating plans for metal products, check the plans with extreme care—and list the dimensions (with description) in duplicate. Keep one copy until job is completed.

Begin with the foundation and "work up"—because the foundation items will be needed first; for example—set up a simple form for your "take off"—

Name of Customer **Job Location** **Date** **Est. No.**

Item	Size	Amt.	Price Std.	Deluxe
Lally columns				
Angle irons				
Basement sash				
Clean-out door				
Cellar entrance				
Dome dampers				
Ash dump				

Item	Size	Amt.	Price Std.	Deluxe
Stirrups				
"I" beams				
Reinforcement bars				
Reinforcement woven mesh				
Bell traps				
Package receivers				

By following this method, several advantages will be gained:

YOU know the "whole job" requirements, the way to sell the "whole job" is simplified.

After you have listed the requirements once, you can anticipate the customer's needs without further reference to the plan.

All listings can be priced—extended and totaled (on the preliminary estimate)—with two prices as easily as one.

ALWAYS figure both "standard" and "deluxe" prices and show your customer why it is a definite saving for him to buy the quality grade (particularly when it is intended for his own home).

Here are a few reasons or "sales pointers" which apply to any type of product on any new home or modernization job.

Labor costs (which are one-half or more of the total) ARE THE SAME whether the standard or deluxe materials are used.

Labor lasts longer when it is used with quality products.

The slight difference in material cost (particularly if financed on a mortgage) will only amount to a few pennies per month.

The durability and quality appeal in case of re-sale—the freedom from expensive maintenance over a period of years—and the enhanced value—all of these definitely tend to make quality both desirable and economical.

Set up all prices for "standard" and "deluxe" so that a customer can elect his choice—(this is the "split decision" method and tactfully used, it will appreciably increase the sales dollar volume).

Constantly remind him that, because labor cost is so important, and normally quality items are installed for the same (or sometimes lower) cost than so-called "cheap items," "best" results are obtained by selecting the "best".

Technical Data for Salesmen — To estimate eaves-troughs and down-spouts, proceed as follows:—

1. Measure or scale plan elevations—and arrive at total lineal feet of eaves-trough and down-spout for each size (as porch sizes may be smaller than main roof).
2. Check plan to find number of leader outlets, end caps, inside and outside corner miters, elbows, shoes, funnels and strainers.
3. Resolve eaves-trough and leader total lengths into 10 ft. sections; for example—if the plan measurements result in 64 lin. ft., order seven 10 ft. pcs. or 70 lin. ft., etc.
4. To find number of eaves-trough hangers and down-spout hooks or clamps, figure one to each three linear feet.
5. Prepare list and estimate in two price columns; one for "galvanized" and the other for "copper".

(Continued on page 104)

BE PROFIT-WISE IN '49.. FEATURE THE GABRIEL LINE!

AMERICA'S HOME-BUILDING

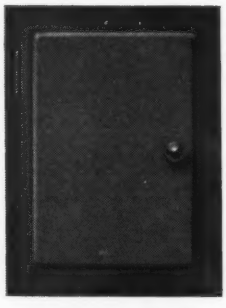
Keep Gabriel in mind during '49 for the best in modern specialties for home construction . . . It's the name that has always stood for leadership in its field . . . High quality, durability and value have constantly kept it in first place . . . So prepare for maximum, steady profits this year by featuring Gabriel products, the choice of home owners and builders everywhere.

PACKAGE RECEIVERS

Sturdily built with quality hardware for frame or masonry walls.

DOME DAMPERS

Chain or poker control. Sizes: 30″, 32″, 36″, 42″ and 48″ openings.



LAUNDRY CHUTE DOORS

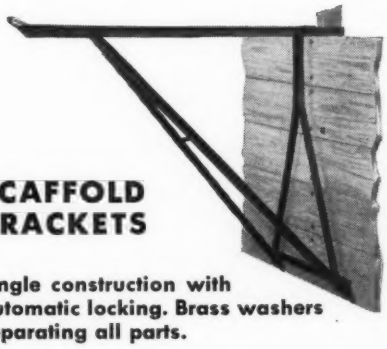
Attractive design. Flush type frame, 10″ x 12″.

ASH DUMPS

Double leaf. 4″ x 8″ opening. All steel welded.

JOIST HANGERS

For 2″ x 8″, 2″ x 10″, 4″ x 8″, 4″ x 10″ joists.



SCAFFOLD BRACKETS

Angle construction with automatic locking. Brass washers separating all parts.

ASH PIT DOORS

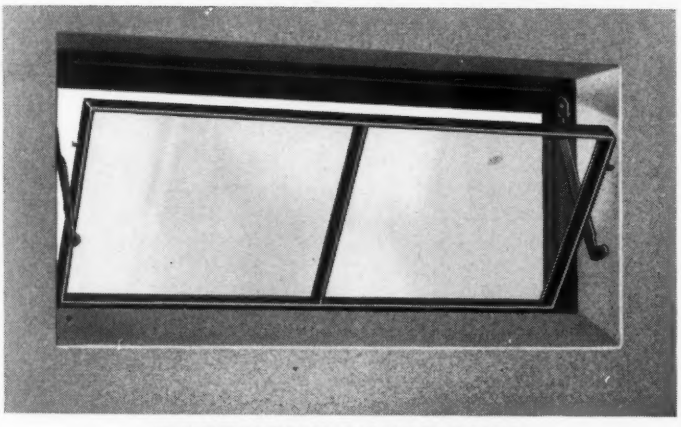
Strap anchors. Practically air tight. Sizes: 8″ x 8″, 12″ x 8″.

Write for Catalog A

GABRIEL STEEL COMPANY

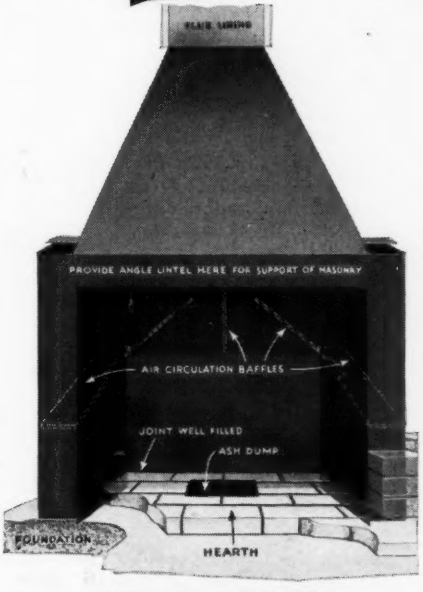
LEADING SPECIALTIES!

YOU, TOO, CAN BUILD MORE DEPENDABLE REPEAT BUSINESS WITH GABRIEL QUALITY PRODUCTS!



BASEMENT WINDOWS

Exclusive side-arm locking detail. Finger-touch opening and automatic locking. Top or bottom opening.



AIR-O-HEATER

Increases fireplace efficiency. Controlled air flow through ducts over the entire form. 4 sizes from 3200 to 7500 cubic feet.

COAL CHUTES

Heavy, rugged construction. Positive locking. Sizes: 24" x 16" for 8" and 12" walls.

GABRIEL
ROLLED STEEL PRODUCTS

National Sales Representatives:
HARRIS, Inc., 145 North High St., Columbus 15, Ohio

13700 SHERWOOD · DETROIT 12, MICHIGAN

2... Metal Products

Estimating Decorative Mouldings

1. List plan dimensions for each type of member and find total linear feet of cap mold—joint mold—cove bullnose—inside and outside corners and check sink size carefully to determine correct pre-fabricated sink rim size.
2. Convert total linear feet of each pattern into nearest larger number of stock lengths (these may be 8'9, 10'0 or 12'0 depending on dealer's stock).
3. Determine purpose—whether molding trim is to be used with wall board (and if so, what thickness)—linoleum—or "linowall"—and select proper style as recesses vary.
4. If two types, one of ordinary commercial quality and one "deluxe" is sold by the dealer, list both in two separate columns on the estimate.

Estimating Ornamental Metal Ceilings

1. Furring—since all metal ceiling should be applied on furring, certain rules for estimating quantities and prices seem indicated—briefly, they are—
2. Furring—nominal size ⅞"x1¼" applied on 12" centers (start from center of ceiling)—at right angles to existing floor joists—plus two complete perimeters for cornice; for example:—
   Ceiling 24'x30" on 12" c.c. would require:
   25 pcs.—30 ft. or ..... 750 L.F.
   Perimeter double ..... 216 L.F.
   Total net ..... 966 L.F.
   Add for cutting waste 10%..... 97 L.F.
   Total furring .....1,063 L.F.
   This approximates 147 l.f. per 100 sq. ft.—therefore—a safe rule for arriving at furring is to allow 150 l.f. per 100 sq. ft.
3. Field or ceiling panels—usually furnished in 12" multiples. Start from center both ways—sides and ends, and arrive at even feet—in this case 24'x30' deduct the width of the cornice (approximately 6") which will reduce the actual "field" to 23'x29'.
4. Molded filler—this unit is used to "fill in" between the cornice (which should follow the wall line) and the "field". It can be cut to fit without disturbing the symmetrical appearance of the ceiling even tho the walls are not parallel.
5. Complete the estimate—this ceiling (24'x30') would require:
   1. 1,080 l.f. of ¾x1¼" furring .....1,100 l.f.
   2. 638—12" ceiling tile (or their equivalent in 12" multiples) ..... 650 s.f.
   3. 108 l.f. of cornice (allow for miters).... 110 l.f.
   4. 110 l.f. of "molded filler"—approx. 8" wide—to allow for fitting—approx..... 80 s.f.
   5. Nails for furring—½ lb. per 100 sq. ft. (allow 1 lb. 8d cement coated nails per 100 sq. ft.) or ..... 8 lbs.
   6. Nails for ceiling—filler and cornice—(allow 1 lb. of 1" or 16 gauge nails per 100 sq. ft.) or ..... 8 lbs.

   Any other size ceiling may be figured in a similar manner.

FUNCTIONAL ACCESSORY AND MAINTENANCE PRODUCTS

There are literally hundreds of products available that serve an accessory or maintenance function in the home or on the farm. Many of these are more accurately classified as hardware items and are covered in Section 5 of this Issue.

It is difficult for a dealer to decide how far to go in supplying these items, as the more he stocks, the more complicated become his sales and inventory problems. There are, however, some types of these products that are very closely allied with other construction materials, and for that reason are of more interest to the dealer than are other items that have very little direct alliance with them.

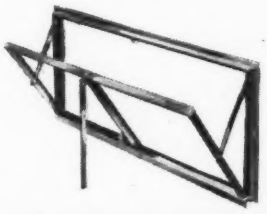
Among these are metal fireplaces, fireplace furnishings, outdoor grills, incinerators, access doors, mail chutes and boxes, louvres, metal mouldings, etc.

***METAL** shutters, incinerators, and circulating fireplace units are three widely divergent metal products used in the home. The present day building products dealer is called upon to know the application efficiencies, and economies of many similar important home accessories.*

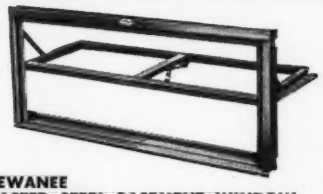
kewanee BUILDING PRODUCTS

SOLD THROUGH DEALERS ONLY

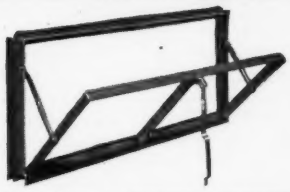
Quality-Built for Quality Building



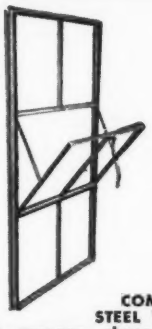
ALUMINUM BASEMENT WINDOW
Latest addition to modern building, combining beauty and long life. No upkeep, no repainting, no rusting. All-aluminum construction. Cam latch assures tight fit. 3 standard sizes.



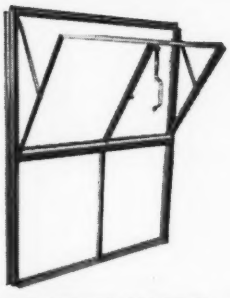
KEWANEE MASTER STEEL BASEMENT WINDOW
The finest basement window on the market. Weather-tight, with exclusive controlled ventilation feature. Vents easily removed. Putty-puttyless glazing. Screens and storm sash available.



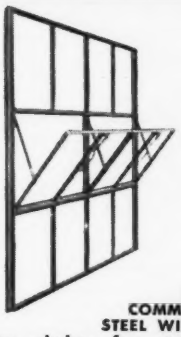
STANDARD BASEMENT WINDOW
Tight-fitting window, competitively priced. Putty-puttyless glazing. Screens and storm sash available.



COMMERCIAL STEEL WINDOW
Ideal for garages, shops, smaller commercial and industrial buildings. Vertical mullion bars available for combining in groups. Putty-puttyless glazing. Screens available.

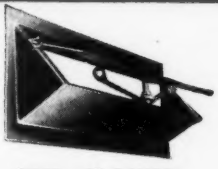


STEEL UTILITY WINDOW
There is an excellent market for this fine window. Widely used in garages, filling stations, and miscellaneous small buildings. Constructed of heavy rolled sections. Putty or puttyless glazing.



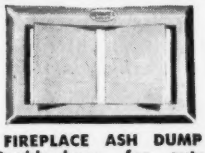
LARGE COMMERCIAL STEEL WINDOW
A larger window for commercial or industrial use. Two vents; heavy, hot-rolled sections. Screens available. Mullion bars to combine window in groups.

BASEMENT COAL CHUTE
Made of steel and guaranteed against breakage. Locks securely. Door is tight-fitting. Slotted hinges hold it open during coal delivery.



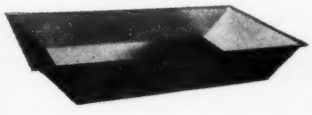
FIREPLACE DAMPER
Kewanee offers cast iron and steel fireplace dampers. Worm gear or poker control in cast iron unit. Steel dampers offer poker control.

FLUE CLEANOUT DOOR
Convenient, strong, inexpensive. Unbreakable hinges furnished with strap anchors for positive anchorage.

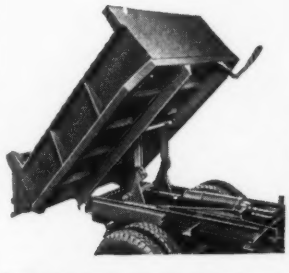


FIREPLACE ASH DUMP
Double-doors for automatic dumping action. Tight-fitting when closed to prevent ash dust from re-entering room. Standard firebrick size.

OTHER KEWANEE BUILDING PRODUCTS
Portable Chutes for Handling Ready Mixed Concrete • Coal Hole Rings and Covers • Bell Trap Cesspools • Cistern Rings and Covers • Cast Iron Ventilation Grates • Sewer Tile Strainers • Brick Carriers • Adjustable Flue Thimbles • Built-in Adjustable Mail Chutes • Window Wells



STEEL MORTAR BOX
Smooth interior — no joints, seams or rivets. Formed from single sheet of rust-resistant steel.



STEEL TRUCK BODIES and HOISTS
Complete line for hauling building material and coal. We also build bodies to your own specifications. Write for our truck body bulletin and price list.

Kewanee's precision-built products assure dealers of worthwhile profits, and the return business of satisfied customers. Write for full details on prices, dealer discounts.

kewanee MANUFACTURING COMPANY

449 Burlington Avenue, Kewanee, Ill.

In addition, the dealer who operates a complete hardware department will find that a stock of the following items, properly merchandised and displayed, will result in a highly satisfactory volume of business. A suggested inventory is also included.

Description	Floor Samples	Suggested Stock
Ash cans—Assorted sizes	1	12
Garbage cans—Assorted sizes...	1	12
Garbage pails—Assorted sizes...	1	12
Rubbish baskets—Assorted sizes.	1	12
Rubbish burners—Assorted sizes.	1	12
Waste baskets—Assorted sizes..	1	12
Watering cans—Assorted sizes..	1	12
Hose reels	1	6
Fire shovels	1	12
Mop—buckets	1	12
Grating for areaways (to order).	.	..
Barbecue grates and fixtures (portable)	1	6
Barbecue grates and fixtures (built-in)	1	(to order)
Metal step ladders	1	6

Metal Furniture and Mis. Items:—

Description		
Bridge tables—(unit)	1	6
Bridge table sets with matching chairs	1	3
Stools—for snack bars	1	10
Chairs, settees, and tables for porches	1	4 ea.
Chairs, settees, and tables for recreation rooms	1	3 ea.
Chairs, settees, and tables for gardens	1	3 ea.
Serving trays—(assorted sizes).	3	12 ea.
Go-carts	1	3
Shopping carts	1	4
Vegetables storage bins	1	6

Allocating Display Space:—While minimum inventories and floor samples are indicated, dealer display space must remain the deciding factor. If it is insufficient, pictures, pamphlets, catalogs, etc., will "bridge the gap" until the volume necessitates expansion.

Because the many related items "over-lap", all walls, ceilings, windows, counters and low partition display booths should be carefully pre-planned—with regard to location and amount of display space that can logically be allotted to each division.

TIPS FOR SALESMEN

Salesman's opportunity—The salesman, who is given the opportunity of analyzing the customer's requirements and then guiding him to make the proper selections, is in an enviable position (provided he has studied the currently available stocks to the end that he knows which items "tie in" with others).

Sell the whole job—Because the Hardware Section (refer to 11) and likewise Sections 14, 15, 5, 6 are so closely related (actually, at several points overlap)—by developing a "check list" of all metal products and also related items, the sales will become "higher—wider—and thicker", which should be every salesman's objective.

INCREASING DOLLAR SALES VOLUME

In the sale of metal products and related items, much can be done to "boost" sales by eye appeal. Remember customers "buy with their eyes".

In arranging display boards, arrange the samples so that "standard"—"super"—and "deluxe" quality items are together or "side by side"—and let the customer decide.

Promote and encourage "eye appeal" by carefully checking all display items to be certain that they are spotless and attractive—(frequent replacements may be required to do this but it will prove itself to be the most economic form of sales promotion).

Most of these products, because of their close connection in service and application with others, can be displayed and sold by suggestive methods. Sales personnel who take full advantage of good suggestive selling can increase turnover considerably. Those items that are definitely seasonal in appeal should be stressed at the strategic time when they are greatest in demand.

2...Metal Products

METAL home accessories, such as the mail slot, clothes chute, and dust chute shown above, offer so much in added home convenience that they are readily sold to home planners and remodelers.

fireplace construction and furnishings

heatsaver fireplace unit

incinerators — garbage receivers

mail and package receivers

ventilators — windows — area walls

Donley devices

THE DONLEY BROTHERS CO. • CLEVELAND 5, OHIO

An interesting fireside effect in a cottage in the woods.

Modern fireplace in a suburban home.

Fireplace in a Texas home retains the historic spirit.

THE COMPANY

From our beginning in 1895, the Donley Brothers Co. has served the building industry by developing and producing Donley Devices whose purpose was to expedite and economize building operations, while serving the convenience and welfare of owners. They have been widely specified by architects and applied by builders for approximately half a century, with continual improvements and additions to the line. Relationship with specifiers and constructors has been close and many devices have been developed in response to their needs and suggestions.

SUCCESSFUL FIREPLACES HOW TO BUILD THEM

Early in its history, the Donley organization initiated a study of principles governing fireplace construction, to assure clean operation and maximum heat delivery. In carrying on a process of education on the working factors of fireplace building, a great number of bulletins and plan sheets have been issued which have become standard in many leading architectural offices. All this experience is summarized in the 80-page booklet, Successful Fireplaces and How to Build Them, which is not only delightful reading, but an invaluable textbook for those dealing with fireplace problems.

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THE DONLEY BROTHERS COMPANY

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PLANNING A SUCCESSFUL FIREPLACE

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THE CHIMNEY

In planning the location, size and general character of your fireplace, several factors are involved, the first of which is, perhaps, the chimney. It is a definite feature of the exterior architecture. In some cases, its location is determined by the desirability of enclosing several flues in the same stack, including, perhaps, that of the basement heating plant.

INTERIOR PLANNING

This includes consideration of proportions of the room as a whole, the way in which it will be used and the decorative scheme contemplated. Just as industrial plants are planned with reference to the sequence of operations, it is necessary for the designer of a home to enact, mentally, the experiences of those who will enjoy the fireplace, from the first glimpse on entering the room to the final relaxation of dozing, reading or chatting within its aura.

SIDE, END OR CORNER

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Such roominess is most likely to be found at the side or end of a room. An end position is very likely to be preferable on the grounds of seclusion. A side position may avoid cramping of furniture.

The sense of security and repose that goes with full enjoyment of a fire is impaired if there are doorways flanking the fireplace or even one doorway close to it. Similarly, windows in the range of vision impair concentration of interest on the fireplace. If needed for light, they may be located above the line of vision, flanking the chimney, and perhaps with book shelves below.

QUESTION OF PROJECTION

A fireplace may stand flush with the wall, it may extend wholly into the room or it may project for a part of its depth. The greatest freedom comes in the case of a fireplace built against an outer wall, with a stack for its entire use.

Where the fireplace is built against a partition, employing a stack with other flues, the question of projection is complicated by disposition of spaces in adjoining rooms and a partial projection is the most frequent solution.

While the extreme simplicity of modern treatments tends toward the flush fireplace, much is to be said in favor of a degree of projection. It helps to emphasize the fireplace. It affords additional space at the wings for the placing of fuel containers, fire tools or furniture. In the case of the Heatsaver Fireplace, projection is distinctly preferable, since the grilles may be placed at the sides, rather than on the face.

THE QUESTION OF SIZE

Both esthetic and operating consideration must be heeded in determining the size of the fireplace. It must also be remembered that a flue for a 48-inch fireplace is fifty per cent larger than for the smaller size. This means a corresponding increase in air supply needed for combustion, if the fireplace is to be used at full capacity.

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It takes air to run a fireplace—air for draft, oxygen for combustion. In homes of past generations it was sometimes supplied overabundantly. The roaring logs drew drafts through every chink and cranny of window or door. Chairs with wings at the level of the face were provided to keep off rear drafts, while the face and shins toasted.

Until recent times there has been little difficulty in securing moderate updraft needed for the operation of the present-day fireplace. But newer techniques of weather stripping, caulking and use of special gaskets on casement windows have made many a modern interior tight as a drum. If a furnace, or an incinerator is operating, the only source from which they can get needed combustion air is down the fireplace chimney. Downdraft thus created prevents maintaining a fire on the hearth. Even if there is no other fire in the interior, perfect tightness prevents the building of a satisfactory open fire.

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BUILDING A SUCCESSFUL FIREPLACE

FOR CONVENTIONAL MASONRY FIREPLACES

Different features of a fireplace bear such a close relation to each other that disproportion between parts or failure to provide adequately for a single function will result in an unsatisfactory fireplace. Details for corner and double fireplaces may be found in the Donley Book of Fireplaces. The table below gives proper dimensions for different parts for fireplaces of various typical sizes. For dimensions of fireplaces with width of opening over 72 in., write The Donley Brothers Company.

PRINCIPLES OF CORRECT FIREPLACE CONSTRUCTION

Size of Opening—To insure good draft, the area of flue should be at least one-twelfth that of fireplace opening. Openings in which the relation of height to width is greater than shown in table require flue area not less than one-tenth the area of fireplace opening.

Separate Flue—A flue of correct size should be provided for each fireplace. It should start above the center and rise not less than 3 ft. above highest point of roof.

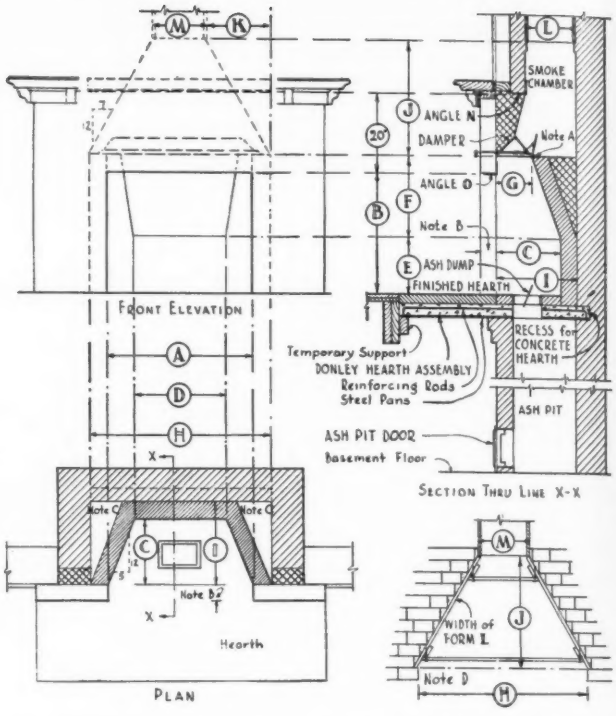
Smoke Chamber—Just above the damper, its sides slope about 7 in. to each foot in height. Smooth unobstructed walls are important.

Hearth Shape—Sides should go straight back for about 4 in., then be splayed at an angle of 5 in. to the foot.

Rear Wall—Should be plumb for 14 or 15 in., then slope forward to form smoke shelf and to support rear flange of damper. This shape deflects heat forward into room while smoke and gases pass through damper.

Damper—Explicit attention must be given to damper size and proper placing. Damper should be set 4 to 8 in. above fireplace opening, with turned-up flange against front wall and rear flange resting on smoke shelf. Opening of damper should not be directly under the flue but in front of it.

Size of Damper—Made in eleven sizes (see table on page 5) for fireplaces 24 to 96 in. wide. A No. 230 or 330 damper should be used for fireplaces having openings 24 to 30 in. wide. For other sizes, follow the same rule.



NOTES ON FIREPLACE CONSTRUCTION SKETCH

Note A: The back flange of the damper must be protected from intense heat by being fully supported by the back wall masonry. Damper should not be built in solidly at the ends. It should be left free to expand, as shown in the front elevation view.

Note B: The drawing indicates thickness of brick fireplace front as 4 in. No definite dimension can be given for this because the various materials, such as marble, stone, tile, etc., have various thicknesses.

Note C: These hollow spaces should be filled to form solid backing. If desirable to include a fireplace flue in either space, outside dimensions should be increased.

Note D: A good way to build a smoke chamber is to erect a wooden form, at the sides, consisting of two sloping boards held apart by spreaders at the top and bottom and nailed upward into cleats as shown. Letters H, M, J, etc., correspond to letters on elevation above. Form boards should have the same width as flue lining. For those who desire it, we make a steel smoke chamber.

The sectional view above shows a rotary control type of damper. On page 5 both rotary and poker control dampers are illustrated.

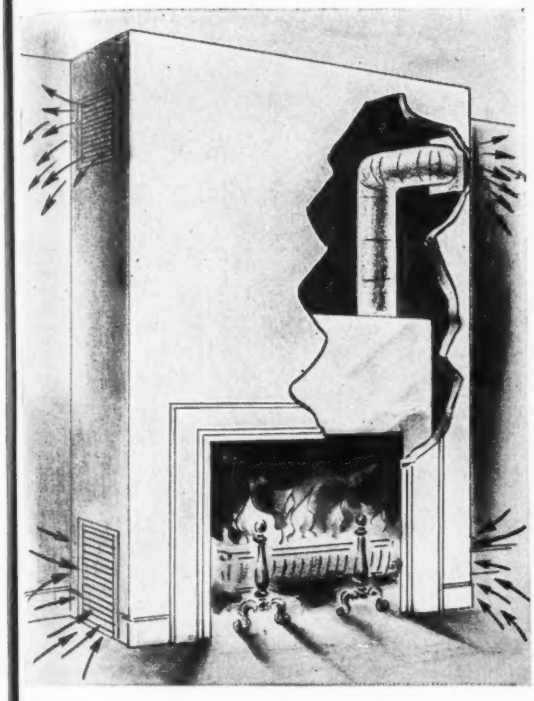
TABLE OF FIREPLACE DIMENSIONS IN INCHES

Finished Fireplace Opening							Rough Brick Work and Flue Size								Equipment							Furnishings
										Old Flue Sizes			New Flue Sizes**							Steel Angles*		
A	B	C	D	E	F	G	H	I	J	K	L	M	K	L	M	Round	Hearth Assemblies	Damper Rotary No.	Damper Poker No.	Ash Dump	Ash Pit Door	N	O	Fire Basket
24	24	16	11	14	15	8¾	32	20	16	11¾	8½x	8½	10	8x12		8	72	324	224	58	12x8	A-36	A-36	24
26	24	16	13	14	15	8¾	34	20	19	12¾	8½x	8½	11	8x12		8	72	330	230	58	12x8	A-36	A-36	24
28	24	16	15	14	15	8¾	36	20	21	11½	8½x	13	12	8x12		10	72	330	230	58	12x8	A-36	A-36	24
30	29	16	17	14	18	8¾	40	20	24	13½	8½x	13	14	12x12		10	72 or 84	330	230	58	12x8	A-42	A-36	28
32	29	16	19	14	21	8¾	40	20	24	13½	8½x	13	14	12x12		10	72 or 84	333	233	58	12x8	A-42	A-42	28
36	29	16	23	14	21	8¾	46	20	29	16½	13	x13	17	12x12		12	72 or 84	336	236	70	12x8	A-48	A-42	30
40	29	16	27	14	21	8¾	48	20	26	17½	13	x13	16	12x16		12	72 or 84	342	242	70	12x8	A-48	A-48	34
42	32	16	29	14	23	8¾	48	20	27	17½	13	x13	16	16x16		12	72 or 84	342	242	70	12x8	A-48	A-48	34
48	32	18	33	14	23	8¾	56	22	35	21½	13	x13	20	16x16		15	96	348	248	70	12x8	B-60	B-54	40
54	37	20	37	16	27	13	60	24	37	21	13	x18	22	16x16		15	96	...	254	70	12x8	B-60	B-60	40
60	37	22	42	16	27	13	72	27	45	27	13	x18	26	16x20		15	96	...	260	70	12x8	B-72	B-66	†
60	40	22	42	16	29	13	72	27	46	27	18	x18	26	16x20		18	96	...	260	70	12x8	B-72	B-66	†
72	40	22	54	16	29	13	84	27	56	33	18	x18	32	20x20		18	Special	...	272	70	12x8	C-84	C-84	†

NOTES. *Angle Sizes: A—3x3x5/16, B—4x3x¼, C—5x3½x5/16. Sizes shown are nominal. Actual size is ½ in. less each dimension. †20" Log Rests. **New Flue Sizes—Conform to new modular dimensional system.

DONLEY HEATSAVER FIREPLACE UNIT

DONLEY DEVICES Complete the Home



Cutaway showing Heatsaver and circulation of air through it.

The Donley Heatsaver is an improved metal fireplace unit which supplements the radiant heat from the open flame with a generous amount of air "warmed" by conduction through steel plates at back, sides and above the fire and, by convection, circulated throughout the room or adjoining rooms.

INSURES CORRECT CONSTRUCTION

The Heatsaver minimizes the risk of an unsatisfactory fireplace. It is a complete, correctly proportioned metal unit including the damper. The inside of the fireplace is already accurately built which eliminates errors of inexperienced workmen. The Heatsaver, correctly installed, assures a successful fireplace, smoke-free and smudge-free.

WIDE RANGE OF USEFULNESS

The Heatsaver is a sufficient system for small homes, cottages or homes in mild climates.

In larger homes with a central heating plant, the Heatsaver carries the heating load in spring and fall. In churches, clubs, etc., it heats one or two rooms for committee meetings without heating the entire building at a considerable saving over firing the main heating plant.

Round furnace pipes from openings in the top of the casing lead to grilles in the same or other rooms. It is an advantage in some installations to have the cold air inlets and the warm air outlets in different rooms.

For maximum heat from the Heatsaver Fireplace, use number and size of outlets on page 8. Heat is wasted if air cannot flow freely through the heating chamber.

HEAT OUTPUT

The amount of heat from any size Heatsaver is unusually great due to the large area exposed to the heat and to four exclusive features.

First, the improved Heatsaver has a rectangular firebox which increases the circulating heat and permits length of fuel wood the full width of opening.

Second, the Heatsaver makes use of the heated surface above the fire as well as the surfaces surrounding it.

Third, special heat circulating tube takes air from the hottest areas and passes it through the smoke chamber where it picks up additional heat which is then diverted to the hot air ducts.

Fourth, the ingenious baffle sheets (an exclusive Donley feature) guide the moving air so that it passes directly over the heated surfaces. These sheets keep all the air in motion, prevent pocketing of heated air and transfer all available heat to the room. They, together with the heat circulating tube, eliminate the need of an insulating jacket.

SELECTING THE PROPER SIZE

To assist in selecting an appropriate size of Heatsaver Fireplace, we give in the table at right our recommendations for a number of typical rooms. In choosing a Heatsaver for a given location, consideration must be given to (1) the cubical contents of the room in which it is located and (2) that of the whole space to be heated, the space available (3) for the fireplace itself and the extent of reliance (4) on fireplace heating as well as (5) the size of the flue. (6) Climatic conditions, type of building construction, type of fuel used and rate of fuel consumption.

If there is doubt about proper size, send us complete information about the different factors and we will make recommendations.

TABLE OF SUGGESTED SIZES

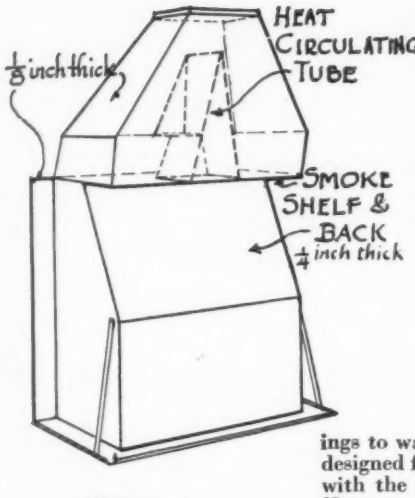
Size of Room in Feet	Heatsaver Size When Located On	
	Short Wall	Long Wall
10x14	No. 26	No. 26—30
12x16	No. 26—30	No. 30—34
12x20	No. 30—34	No. 34—42
12x24	No. 30—42	No. 34—42
14x28	No. 34—42	No. 42—48
16x30	No. 34—42	No. 48—54
20x30	No. 42—48	No. 54—60

Showing finished appearance of a Heatsaver Fireplace with cold and warm air grilles same as in cut at left.

Recreation room in an Ohio home is kept warm and cozy by this Heatsaver.

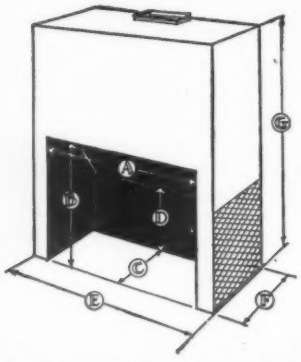
Heatsaver in a Ft. Lauderdale, Fla., home is greatly appreciated during occasional cold weather.

DONLEY HEATSAVER FIREPLACE UNIT (Cont'd)



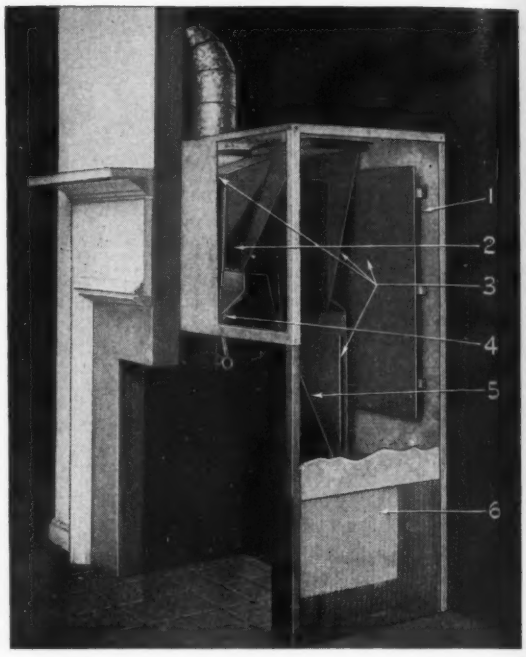
STURDY CONSTRUCTION

The Donley Heatsaver Unit is built along the lines of a warm air furnace, having an air chamber surrounding the fire. It is constructed to give a lifetime of dependable service and satisfactory performance. Side walls of fire chamber are of No. 12 gauge steel. The back of the chamber and the smoke shelf are of ¼-in. steel boiler plates. Other structural parts are of No. 12 gauge steel. Casing designed to be pierced for outlet pipes, as in warm air furnace, is 26 gauge galvanized steel. Steel mesh excludes vermin from inlet openings to warm air chamber. A throat damper designed for poker control (page 5) is integral with the unit. Joints and fastenings of the Heatsaver are electric arc-welded for maximum strength. Designed by experts and made to exact specifications, perfect draft is assured with no danger of a smoky fireplace due to careless workmanship.



DIMENSIONS OF HEATSAVER UNITS

Heat-saver No.	Heatsaver Dimensions, Inches							Ship. Weight lbs.
	A	B	C	D	E	F	G	
26	26	24	16	16	33	21	51	308
30	30	28	16	16	38	21	55	355
34	34	28	16	16	42	21	55	395
42	42	30	18	16	50	23	62	500
48	48	30	18	16	58	23	62	565
54	54	34	20	18	66	26	80	890
60	60	34	20	18	72	26	80	1030



Cutaway View Construction of Heatsaver

1 *Large warm air chamber.*
2 *Warm air duct through smoke chamber that equalizes the heat.*
3 *Baffle sheets keep outer shell cool and increase delivery of heat through ducts.*
4 *Donley poker control damper.*
5 *Quarter-inch steel plate used for smoke shelf and back of fire chamber.*
6 *Cold air inlet screened to prevent entrance of rodents.*

LOCATION OF COLD AIR INLETS

The accompanying diagrams show a number of suggestions for the location of cold air inlets.

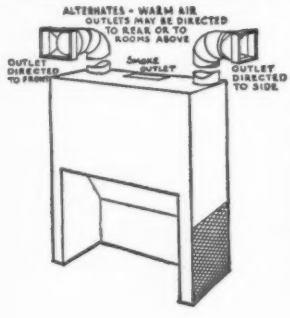
No. 1 — Where a fireplace is to be installed in an existing building having none, this design permits the flue to be placed entirely outside the frame wall and enables the fireplace to be built with a minimum of cutting. The amount of projection is governed by the size of flue and thickness of wall between flue lining and outside wall.

No. 2 — Where wall is large enough to permit the fireplace to project into it without apparent crowding and where inlet grilles must be inconspicuous, this design is recommended.

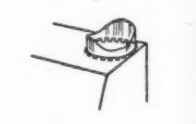
No. 3 — Similar to No. 2 except requiring slightly less projection into the room by using a 6-in. instead of a 9-in. grille. The projection into the room is governed by width of grille and type of fireplace facing material used.

Other arrangements for cold air inlets have been used to suit special requirements. Thus, grilles may be placed in the baseboard at the sides of the fireplace or even across the room and air brought through ducts under the floor. Another arrangement draws air from the back of the fireplace with the grille in another room.

ARRANGEMENT OF WARM AIR OUTLETS

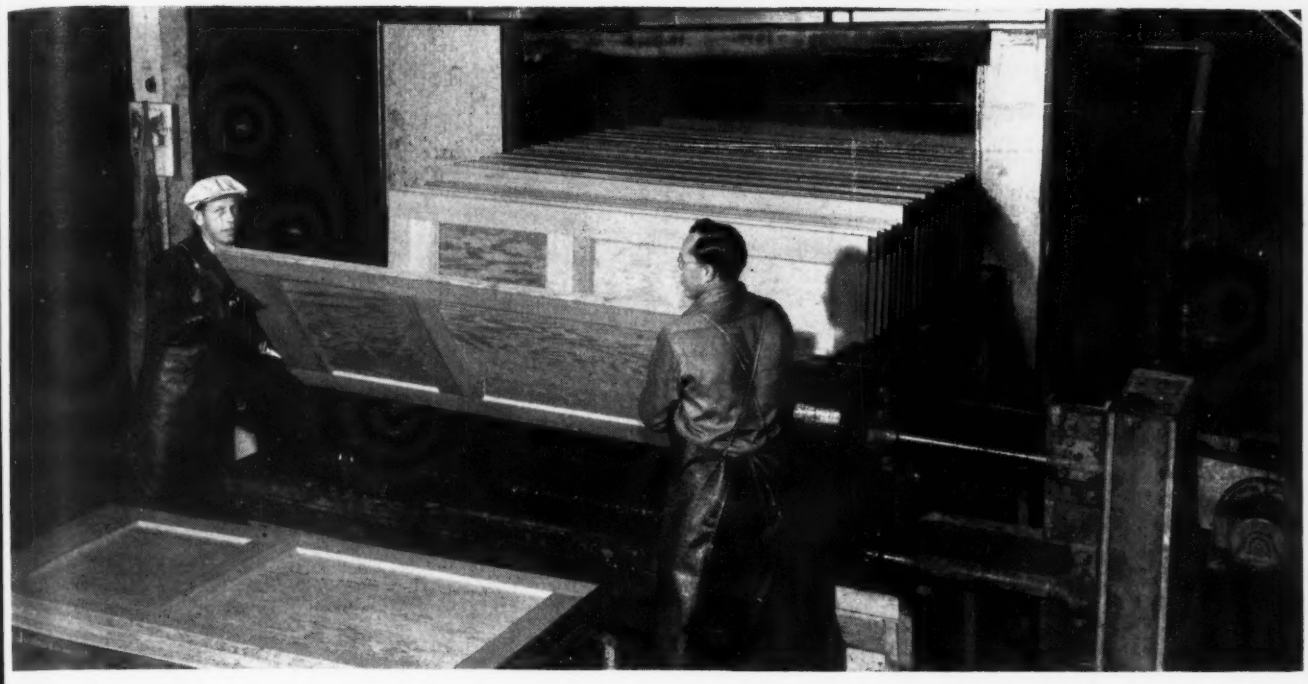

ALTERNATES - WARM AIR OUTLETS MAY BE DIRECTED TO REAR OR TO ROOMS ABOVE
OUTLET DIRECTED TO FRONT
SMOKE OUTLET
OUTLET DIRECTED TO SIDE

Drawing at left shows various positions and directions of warm air outlet pipes. A study of this diagram plus diagrams showing cold air inlets and rough masonry dimensions (page 9) will aid in determining the projection of fireplace into room. Where inlets and outlets are desired at the sides of the fireplace breast, it must project into the room 9 in. plus the thickness of facing material. If outlets are located above mantel on the face, but cold air inlets are required at sides, fireplace must project into room not less than the 6-in. width of grille plus thickness of facing material.



To join pipe to casing, snip narrow leaves around pipe as shown. Bend alternate leaves at right angle and place against casing. Then bend leaves passing through casing in the same manner. Finish with collar of asbestos fabric and cement.

8



Section 3

Windows, Doors and Millwork

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MILLWORK DEFINED

While it is difficult to get general agreement as to just what constitutes millwork, the term, as it applies to the retail lumber and building products dealer, can be narrowed down to the following items of mill output that are used in building construction:

Wood windows, either open or glazed, according to specifications.

Metal windows, aluminum and steel.

Doors, all kinds.

Window and door frames, either put together or K. D. according to the inquiry.

Window and door trim, including inside door jambs.

Running mouldings, including base, chair rail, picture moulding, hook strip, wainscot cap, etc.

Panel work, either put together or K. D. according to inquiry.

Interior columns and colonnades.

Stair material, not including flooring for landings or stair jacks.

Mantels and mantel shelves.

Metal mouldings.

Casework and cupboards, usually put together.

Sink trim.

Miscellaneous mouldings.

Bent work.

Scrolled work requiring the use of some woodworking machine but not included in any of the above items.

For outside use:

Outside columns.

Balustrades.

Porch and cornice brackets, usually put together.

Crown and bed mouldings, in linear lengths.

Weather stripping in its many sizes, shapes and materials.

Storm sash.

Hardware, like sash balances, etc., that form a part of the window unit.

Any miscellaneous mouldings, bent work or scrolled work requiring the use of some woodworking machine but not included in any of the above items.

THE MILLWORK that is incorporated into a house has a definite influence on the finished appearance. Architects take great pains in the selection of all items that come under this classification, for these are the finishing touches that give character and style to the completed product.

It is to the highest credit of the many manufacturers of millwork products that they have provided the contruction industry with a full selection of types and styles to fit any architectural requirement, using the techniques of production that insure maximum quality at the lowest possible cost.

Wood, metals, plastics are all used effectively in the manufacture of millwork products. Much has been done with metals in recent years. Products of metal construction have proved their service abilities long ago, and are now an essential part of the industry. Work with plastice is still in the early stages but it promises to become more and more a factor in the industry.

Technological improvements and advancements to establish products have also been made. Such commonplace items as doors and windows have been improved through the years until today they are more durable, beautiful, and efficient than ever before.

To the building products dealer, this means that he is called upon to have a working knowledge of a far wider variety of items than ever before, but it also means that the volume and profits from them can be one of the most important of any he handles.

The modern tendency toward more light in every new home affords the retail dealer a splendid opportunity to sell more windows. Every dealer should know what are the most popular designs, styles and size of stock windows used in his community and plan to have an adequate stock always on hand. He should also bear in mind that stock windows and sash are now freely available in the modular sizes, thus harmonizing perfectly with the modular system of home construction.

Fundamentally, there are three kinds of windows available for the modern home, the vertical sliding, or double hung window; the casement, which swings within the frame; and the horizontally sliding window. There are various modifications of these basic types; the projected window of the casement principle that swings on a horizontal rather than a vertical axis, like the basement sash; and of course the very popular picture window, that presents a wide expanse of glass but which usually cannot be opened or closed.

The modern window is as highly engineered as any other fixture in the house assembly. Manufacturers of quality windows have designed into them all the features necessary to provide a lifetime of service.

There are several essential features of good window installation, any or all of which insure proper performance. Among these are:

1) The frame should be positively joined with the wall section into which it is mounted to guard against air leakage. A properly made frame allows no space between window and house frame, and to insure weather seal the blind stop is nailed directly to the studding.

2) It is essential that the sills also are tightly fitted to the side members in order to avoid moisture seepage when subjected to driving rain.

3) The sash itself must be sturdily constructed, perfectly square and true, and must be precision fitted to the frame. The space between sash and frame must be equal at all points to avoid sticking and binding.

4) In wood windows particularly, correct glazing is important. In addition to using quality glass, the proper method of installation will prevent cracking and deterioration of the putty.

5) Many of the manufacturers of quality wood windows provide a toxic treatment to all wood members to increase resistance to rot and insects.

Many of the individual windows have patented features of various types, but fundamentally all are aimed at providing a really efficient unit for the light construction industry.

The Double Hung Window: The double hung type window is a long established favorite in house construction. It consists of a top and bottom sash that slide vertically in stop partitions, the lower sash moving inside of the upper.

The old method of actuating the sash, so that it would stay at any position it was placed, was to balance each sash with sash weights fastened to the sash by cords. In recent years, however, these have been replaced by several spring type devices that provide more positive and longer lasting service, and requiring less space in the window assembly than the weights and cords.

Most double hung window units are made of wood; but several ingenious metal units of this type are available.

The Casement Window: The casement is also an old favorite and affords certain physical aspects that fit some architectural styles better than any other type. In addition, recent improvements have enhanced its efficiency.

The casement has been readily suited for metal construction and many manufacturers produce the complete unit in both steel and aluminum. The swing-out action of the casement provides maximum ventilation, and modern casement hardware insures smooth, easy mechanical action of the sash. In addition, recently developed extended hinges make cleaning on the outside a simple operation.

The Horizontal Sliding Window: This type window has been developed in response to the demand for the largest possible window openings. By means of a specially designed sash and sill tracks the windows slide sideways, yet when in the closed position provide a positively air and watertight seal.

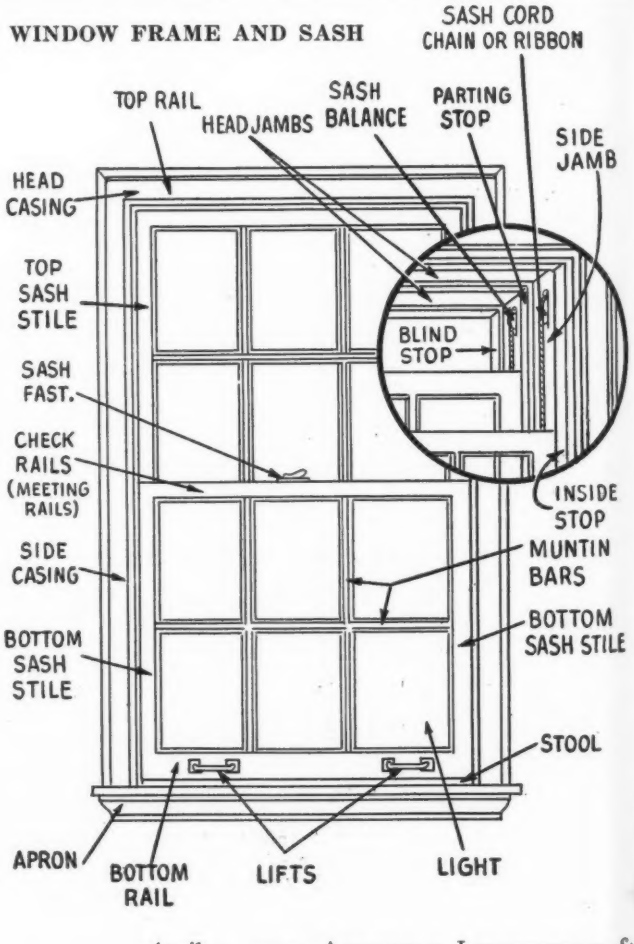
Projected Windows: Pleasing in appearance and highly efficient in service, projected windows are comparatively new to the light construction field but have been well received because of several unique service features.

The projected window consists of one or more sash in a single frame that operate outward on a horizontal axis. In addition to affording maximum ventilation without drafts, it also provides an awning effect that reduces the transmission of summer heat indoors.

This type is manufactured in both steel and aluminum, the latter type metal being more popular for most light construction installations.

Picture Windows: The picture window is an innovation along with modern architectural design. It originally was intended for true modernistic styles but has since been pleasingly adapted to almost every other style as well.

Picture windows, usually incorporated in living and dining rooms, provide a wide expanse of glass. They



PROJECTED type windows are now manufactured for installation in small homes. In addition to their efficiency, they add decoration and style to the house shown above.

are made both plain and with muntins, but due to their extreme size are usually static and cannot be opened or closed. Because of this, many picture windows are flanked by double hung or casement windows that provide ventilation for the room, and extend even further the expanse of window area.

Double Glazing: The trend for more and more window area in the homes of today has complicated the heating problem. Single pane glass is a poor insulating material, and heat coming in contact with it is readily transmitted to the outside.

This is eliminated in two ways: one by the installation of storm windows, the other by means of a unique new glass product that consists of two panes separated by a dead air space between. The unit is hermetically sealed in manufacture, and winter heat loss and window sweating are eliminated by its use.

WEATHER STRIPPING

The heat losses caused by infiltration through cracks around doors and windows is always considerable and even on a newly constructed home with well fitted windows, at least 80 percent of the leakage can be eliminated by the installation of weather strip, with a probable savings of 20 percent in fuel cost. On old homes where the sash have shrunk, in many cases to the extent that the windows rattle, the leakage is so much greater that it is not unusual for home owners to find their fuel costs reduced as much as 40 percent by weather strip installation alone.

Weather stripping is produced in many styles, shapes and materials, among which are the following:

Surface Type

Narrow metal or wood members are provided with recessed slots in which strips of felt or synthetic rubber are firmly inserted. These are applied to the contact faces of the door or window, meeting the stop or stile and acting as a flexible, elastic barrier to infiltration.

Other surface types include either molded felt in narrow strip rolls or fabric-enclosed stitched members with rope-like fiber inserts. The stitched edge acts as the nailing flange. Both of these are quite pliable, can be bent around corners, and are simple to cut and fit.

Spring Type

Bronze, copper or other resilient rust-resisting metals are processed into thin single or double thickness leaves and formed into strips of standard-size lengths for doors and windows. These are applied in window stiles and door jambs. By nailing the pre-punched nailing edge to the frames, the spring action of the leaf permits it to remain in close contact with the door and window, preventing considerable infiltration. For doors and door sills or saddles, heavier gauge metals are provided.

This type of weather stripping is usually packaged in cardboard tubes. A complete set of the required members to fit a specific opening, application directions, and rust-proof nails are included in the package.

Recess Type

These consist of rolled, tongued and grooved, narrow-width sections of light gauge zinc, aluminum or similar rust-proof metals.

To apply this type of weather stripping, a groove is cut in the sash or door with a special grooving plane. The metal weather stripping is attached to the stile or jamb and accurately fits the groove. This application is widely used on existing structures.

Prefabricated Type

Several outstanding sash, door and frame manufacturers have developed techniques by which weather stripping is incorporated with the sash and frames at the time of manufacture. Economy of factory-engineered precision methods, increased efficiency because of complete unit production, and lowered over-all costs to the consumer appear to be a logical consequence of these efforts and should be given serious consideration by the dealer.

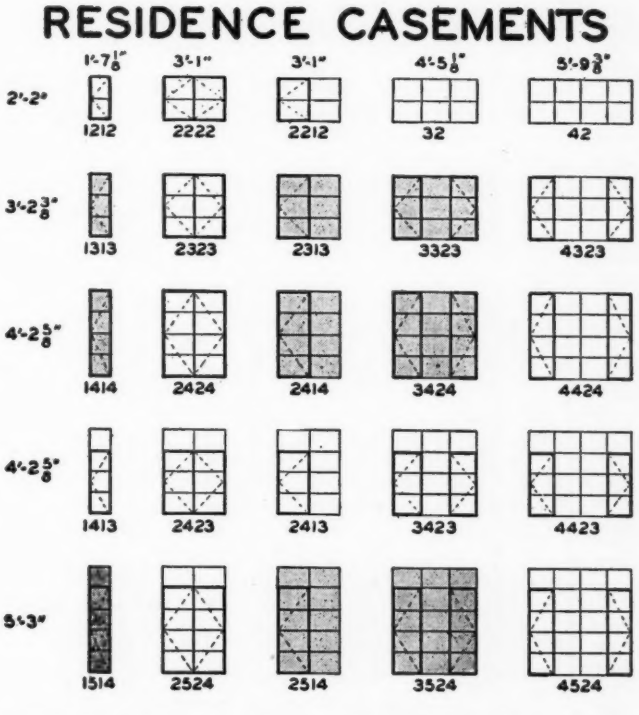
Caulking

While not considered weather stripping in the true sense of the term, caulking is recommended practice around the outside of frames and where the sills rest on masonry walls.

Selling Methods

Weather strip is marketed by two methods, the sale and installation by contractors who employ experienced mechanics to install the strip, or, packaged materials sold direct to home owners for self installation. The types of weather strip sold by installing contractors are not suitable for over the counter sale, as in installing, certain tools are needed to cut the sash to provide for the strip and it takes men who make an occupation of installing weather strip to make a perfect installation. If this type of strip is sold to the home owner to be installed by him, it generally results in an unsatisfactory job and in many instances the results may be disappointing.

Packaged materials are on the market for sale by lumber and building products dealers and the majority of these weather strips are of a type that the home owner can nail on windows and doors without the use of tools other than a hammer and snips. The most commonly used is the spring bronze, or spring aluminum type that is nailed in the runway of windows or doors.



ABOVE types and sizes are the Metal Window institute's recommended standards for residence casements. The types and sizes shown are the result of a complete postwar revision and provide an adequate range in each window classification to afford ample selectivity while enabling dealers to carry local stocks to meet popular requirements.

OPENING SIZES—PREFIT LAYOUTS and GLASS SIZES

CHECK RAIL WINDOWS 1⅜"—POPULAR SIZES and DESIGNS

Prefit Face Measurements	Stiles 1⅜" Top Rail 1⅜" Bottom Rail 3" Vertical Bar ⅞" Horizontal Bar ⅞" Check Rail 1 ⅜"				Stiles 1⅜" Top Rail 1⅛" Bottom Rail 3" Vertical Bar ⅝" Muntin ⅝" Check Rail 1 ⅜"		St. 1⅜" T.R. 1⅛" B.R. 2 ¾" V.B. ⅝" Mun. ⅝" C.R. 1 ⅜"	St. 1⅜" T.R. 1⅛" B.R. 2 ¾" V.B. ⅝" Mun. ⅝" C.R. 1 ⅜"
Windows are made ⅛" narrower and ⅛" shorter than window opening sizes shown below	2 Lt.	Top 3 Lt. W.	Top 4 Lt. W.	4 Lt. H.	Top 6 Lt.	Top 8 Lt.	12 Lt.	16 Lt.
1-8x3- 2	16x16	.....	.....	16x 7¾	.....	.....	.....	.....
3-10	20	.....	.....	9¾	.....	.....	.....	.....
4- 6	24	.....	.....	11¾	.....	.....	.....	.....
2-0x2-10	20x14	6 ½x14	.....	20x6¾	6 ½x 7	.....	.....	.....
3- 2	16	16	.....	7¾	8	.....	6³½x 8	.....
3- 6	18	18	.....	8¾	9	.....	9	.....
3-10	20	20	.....	9¾	10	.....	10	.....
4- 2	22	22	.....	10¾	11	.....	11	.....
4- 6	24	24	.....	11¾	12	.....	12	.....
4-10	26	26	.....	12¾	13	.....	13	.....
5- 2	28	28	.....	13¾	14	.....	14	.....
2-8x2-10	24x14	7³½x14	.....	24x 6¾	7³½x 7	.....	.....	.....
3- 2	16	16	.....	7¾	8	.....	8x 8	.....
3- 6	18	18	.....	8¾	9	.....	9	.....
3-10	20	20	.....	9¾	10	.....	10	.....
4- 2	22	22	.....	10¾	11	.....	11	.....
4- 6	24	24	.....	11¾	12	.....	12	.....
4-10	26	26	.....	12¾	13	.....	13	.....
5- 2	28	28	.....	13¾	14	.....	14	.....
2-8x2-10	28x14	9 ⅝x14	.....	28x 6¾	9 ⅝x 7	.....	.....	.....
3- 2	16	16	.....	7¾	8	.....	.....	.....
3- 6	18	18	.....	8¾	9	.....	9¹½x10	.....
3-10	20	20	.....	9¾	10	.....	.....	.....
4- 2	22	22	.....	10¾	11	.....	12	.....
4- 6	24	24	.....	11¾	12	.....	13	.....
4-10	26	26	.....	12¾	13	.....	14	.....
5- 2	28	28	.....	13¾	14	.....	.....	.....
3-0x2-10	32x14	.....	7¹³⁄₁₆x14	32x 6¾	.....	7¹³⁄₁₆x 7	.....	7¹³⁄₁₆x10
3-10	20	.....	20	9¾	.....	10	.....	12
4- 6	24	.....	24	11¾	.....	12	.....	.....
4-10	26	.....	26	12¾	.....	13	.....	14
5- 2	28	.....	28	13¾	.....	14	.....	8¹³⁄₁₆x12
3-4x4- 6	36x24	.....	8¹³⁄₁₆x24	36x11¾	.....	8¹³⁄₁₆x12	.....	13
4-10	26	.....	26	12¾	.....	13	.....	14
5- 2	28	.....	28	13¾	.....	14	.....	9¹³⁄₁₆x12
3-8x4- 6	40x24	.....	9¹³⁄₁₆x24	40x11¾	.....	9¹³⁄₁₆x12	.....	14
5- 2	28	.....	28	13¾	.....	14	.....	.....

OTHER DESIGNS and SIZES of STOCK WINDOWS and SASH AVAILABLE

No attempt has been made in this catalogue to illustrate or list all of the designs and sizes of Ponderosa Pine Stock Windows and Sash that are available. On this and the following page are shown those that are most popular. For a complete listing of all standard sizes and designs, including one light sash, transoms and porch sash, write The National Door Manufacturers Association.

OPENING SIZES—PREFIT LAYOUTS and GLASS SIZES

POPULAR SIZES and DESIGNS

CASEMENT SASH 1⅜"

Prefit Face Measurements — Stiles 1²½" Top Rail 1¹½" Bottom Rail 3" Vertical Bar ⅝" Muntin ⅝"

Sash are made ⅛" narrower and ½" shorter than opening sizes given below

	1 Lt.	3 Lt. H.	4 Lt. H.	6 Lt. 2 W.	8 Lt. 2 W.
1-3½x3- 2	12x33	12x10¹³⁄₁₆	.....	5⅞x10¹³⁄₁₆	.....
3-10	41	13 ½	12x10⅛	13 ½	5⅞x10⅛
4- 6	49	.....	12⅛	.....	12⅛
1-7½x3- 2	16x33	16x10¹³⁄₁₆	.....	7⅞x10¹³⁄₁₆	.....
3-10	41	13½	16x10⅛	13 ½	7⅞x10⅛
4- 6	49	.....	12⅛	.....	12⅛

STORM SASH and SCREENS 1⅛"

Prefit Face Measurements

Storm Sash: St. 1²⁹⁄₃₂" T.R. 1²⁹⁄₃₂" B.R. 4 ¼" C.R. ⅞"

Screens: St. 1²⁹⁄₃₂" T.R. 1²⁹⁄₃₂" B.R. 3" C.R. ⅝"

Storm Sash or Screens

Storm Sash and Screens are available for all Standard Windows. The more popular sizes conform to the window sizes shown on the preceding page.

Storm Sash and Screens are made ⅛" narrower and 1" longer than window opening sizes.

CELLAR SASH 1⅛" and 1⅜"

Prefit Face Measurements	St. 1²⁹⁄₃₂" T.R. 1²⁹⁄₃₂" B.R. 1²⁹⁄₃₂" V.B. ⅞"	Prefit Face Measurements	St. 1²⁹⁄₃₂" T.R. 1²⁹⁄₃₂" B.R. 1²⁹⁄₃₂" V.B. ⅞"	Prefit Face Measurements	St. 1²⁹⁄₃₂" T.R. 1²⁹⁄₃₂" B.R. 1²⁹⁄₃₂" V.B. ⅞"
Sash are made ⅛" narrower and ⅛" shorter than opening sizes given below	2 Lt.	Sash are made ⅛" narrower and ⅛" shorter than opening sizes given below	3 Lt.	Sash are made ⅛" narrower and ⅛" shorter than opening sizes given below	4 Lt.
2-0x1-4	10x12	2-4x1-4	8 x12	3-8x1-4	9¹³⁄₁₆x12
2-4x1-4	12x12	2-8x1-0	9¹½x 8	1-8	16
1-8	16	1-4	12	4-4x1-4	11¹³⁄₁₆x12
2-0	20	1-8	16	1-8	16
.....	.....	3-0x1-4	10²½x12	.....	.....
.....	.....	1-8	16	.....	.....
.....	.....	3-4x1-8	12 x16	.....	.....
.....	.....	.....	.....	.....	.....
.....	.....	.....	.....	.....	.....

PLAIN RAIL WINDOWS 1⅛"

Prefit Face Measurements	St. 1²⁹⁄₃₂" T.R. 2 ⅜" B.R. 2 ⅜" M.R. 1 ⅜" V.B. ⅞" Mun. ⅜"	Prefit Face Measurements	St. 1²⁹⁄₃₂" T.R. 2 ⅜" B.R. 2 ⅜" M.R. 1 ⅜" V.B. ⅞" Mun. ⅜"
Windows are made ⅛" narrower and ⅛" shorter than opening sizes shown below	8 Lt.	Windows are made ⅛" narrower and ⅛" shorter than opening sizes shown below	12 Lt.
1-8x3-10	8x10	2-4x3-10	8x 10
2-0x4- 6	10x12	4- 6	12
2-4x3- 2	12x14	2-8x4- 6	9¹½x12
.....	.....	3-0x4- 6	10²½x12
.....	.....	.....	.....
.....	.....	.....	.....

BARN or UTILITY SASH 1⅛" and 1⅜"

Prefit Face Measurements—Stiles 1²½" Top Rail 1²½" Bottom Rail 3" "Vertical Bar ⅜" or ⅞" Muntin ⅜"

Sash are made ⅛" narrower and ½" shorter than opening sizes given below	4 Lt.	Sash are made ½" narrower and ½" shorter than opening sizes given below	6 Lt. 2 W.	Sash are made ½" narrower and ½" shorter than opening sizes given below	6 Lt. 3 W.	Sash are made ½" narrower and ½" shorter than opening sizes given below	9 Lt. 3 W.	Sash are made ½" narrower and ½" shorter than opening sizes given below	12 Lt. 3 W.
1-8x2-1	8x10	1-8x2-11¼	8x10	2-0x1-11	6³½x 9	2-0x2- 8¼	6³½x 9	2-4x3-9½	8 x10
2-5	12	2-0x3- 5¼	10x12	2-4x2- 1	8 x10	2-4x2-11¼	8 x10	2-8x4-5½	9¹½x12
2-0x2-1	10x10	.....	.....	2- 5	12	3- 5¼	12	3-0x4-5½	10²½x12
2-5	12	.....	.....	2-8x2- 5	9¹½x12	2-8x3- 5¼	9¹½x12	.....	.....
2-9	14	.....	.....	2- 9	14	.....	.....	.....	.....
3-1	16	.....	.....	3-0x2- 5	10²½x12	.....	.....	.....	.....
2-4x2-5	12x12	.....	.....	.....	.....	.....	.....	.....	.....
2-9	14	.....	.....	.....	.....	.....	"Vertical bar ⅞" for Sash 2 lights wide; ⅝" for Sash 3 lights wide.	.....	.....
3-1	16	.....	.....	.....	.....	.....		.....	.....

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STORM SASH

Due to the promotion by specialty applicators that have entered almost every section of the country where this type of home accessory is needed, the american home-owner is "storm sash" conscious. While the high pressure methods of some of these people have left them open to criticism, they have provided the customer with a service that can add home comfort in the winter and a substantial reduction in heating costs.

There are many types of storm sash available on the market. The most familiar type is the wood frame type that is hung in the fall and replaced with screens in the spring.

While many home owners prefer this type because it blends harmoniously with the style of a frame house, others have been enthusiastic over the combination storm window and screen units that have recently been introduced. These are permanent installations and can be changed from screen to storm window in a moment.

Combination windows are supplied in both metal and wood, the former being quite popular because of less bulk, lightness, and freedom from maintenance.

Most building material dealers have stocked storm sash for many years but few engaged in any intensive sales programs until specialty applicators began making serious inroads on their business. Those who have entered the field on this basis have soon found that it is truly a package sale item, sold installed, with provision made in the majority of cases for time payment.

In many ways, the building products dealer is the logical source of supply for storm sash. Almost without exception his is the better established business; he is in a position to give more expert advice, and what is more important to the customer, to stand behind the product and workmanship so that a satisfactory job is assured.

To develop a substantial volume of business, however, it is necessary to actively merchandise the products. Manufacturers of these products have developed effective displays, some of which are portable and may be easily carried by a salesman.

A competent salesman who knows how to develop leads, to estimate the cost of the complete job, and to follow through to see that the work is completed to the customer's satisfaction, will easily pay his way for the dealer. In large communities, a staff of salesmen can be maintained profitably.

This, together with a consistent advertising program in newspapers and direct-by-mail will make the sale of storm windows a highly satisfactory department of the building product dealer's business.

COMBINATION storm sash and screens have proved very popular with home owners. A wide variety of highly efficient units are on the market.

DOORS

DOORS

The remarkable advancement made by the millwork industry generally has also evidenced itself in the present-day doors available to the construction industry. In addition to the long established types which are today better than ever, new types have been added. Some of these incorporate new manufacturing techniques and processes; as servicable and efficient products, they are outstanding.

Stile and Rail Doors: Panel doors have been extremely popular for many years and the wide variety of styles and sizes available gives beauty and charm to almost any decorative scheme.

These doors are made predominately of Douglas fir and Ponderosa Pine and are assembled from a number of milled pieces. Of these the side members are called the "stiles," joined at either end by the top and bottom rails. Other horizontal members are called "cross rails," and the "lockrail" is located slightly below center at the height of the knob and lock.

Only fine kiln dried stock is used in the manufacture of quality doors, and modern precision machinery and methods, together with recently perfected glues that unite the members into a permanent unit, makes these doors of the highest quality and utility.

Stile and rail doors are also manufactured of plywood. In these, the stiles and rails are 3-ply construction. Interior door panels are flat 3-ply construction, 5/16 inch thick. Exterior door panels are flat 5-ply, ⅜ inch thick. Standard construction for raised panels is a 5-ply lumber core panel made with a hardwood rail to match face veneer and concealed crossbanding, using standard thickness face veneer. These doors may be finished in any species of domestic or foreign veneer.

Flush Doors: These doors are manufactured in a variety of ways, all of which are designed to provide an extremely strong, rigid, and beautiful product. These present a smooth face on both sides and generally are faced with a hardwood veneer. They are usually stained or given a natural finish to bring out the natural beauty of the wood grain.

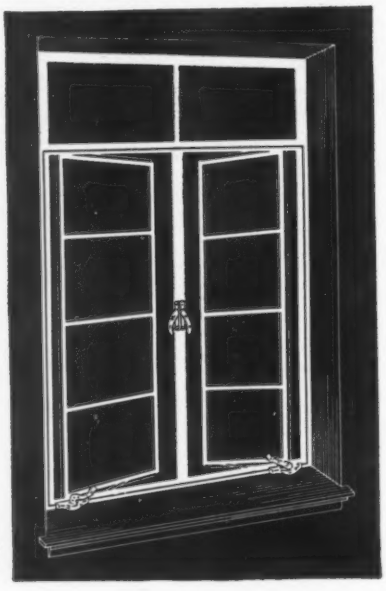
Cores for flush doors are made in a number of ways from multi-ply lumber of the proper thickness, to unique hollow cores that afford a door of extreme lightness yet with all the strength and rigidity necessary for maximum service requirements.

Soundproof Doors: A custom built modification of the flush type door is available for uses where soundproofing is desired. In its construction a soundproofing material is incorporated into the core and the assembly is glued together so as to become a permanent unit. Edge strips to match the faces are also glued in place and the external appearance is the same as an ordinary flush type door.

Fireproof Doors: Several types of fireproof doors are also manufactured. One of these has a core that has

THORN WINDOWS

RESIDENCE CASEMENTS



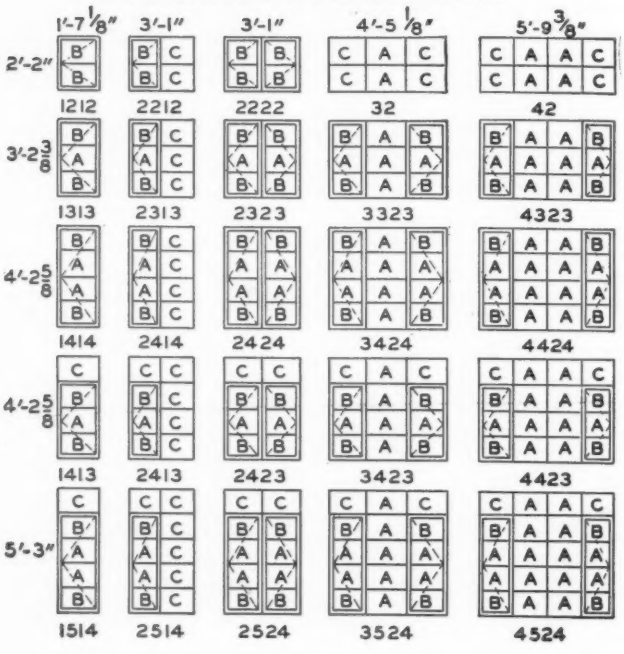
Thorn Residence Casements are ruggedly constructed of either extruded aluminum or hot rolled steel bars, shipped completely assembled.

Hardware, consisting of locking handle and Roto control, is separately packaged.

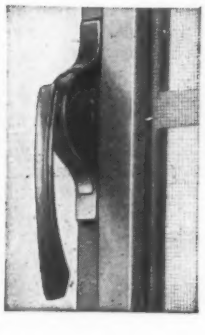
Aluminum Casements are cleaned and shipped in natural mill finish.

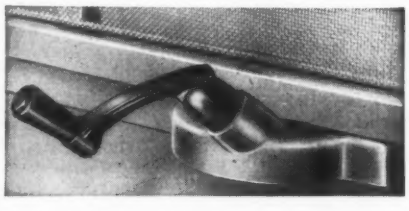
Steel Casements are cleaned, Bonderized and prime painted.

ALUMINUM AND STEEL



SIZES SHOWN ARE ACTUAL WINDOW SIZES
OPENING SIZES ARE 1/4" LARGER.

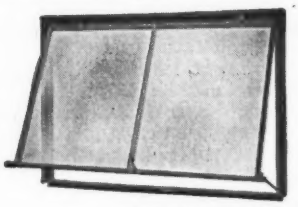




Standard hardware is zinc die cast, finished in clear lacquer for aluminum and bronze lacquer for steel.

ALUMINUM

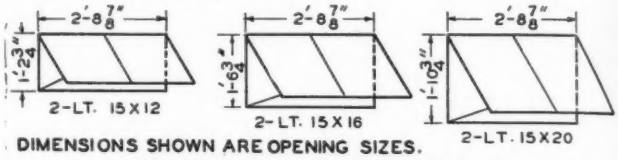
BASEMENT WINDOWS



Basement Windows are top hinged to open in. All hardware is applied at the factory.

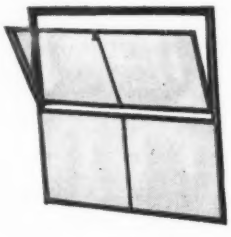
Steel Windows are cleaned, Bonderized and prime painted.

STANDARD TYPES



DIMENSIONS SHOWN ARE OPENING SIZES.
FOR MEASURING POINTS REFER TO DETAILS.

STEEL UTILITY WINDOWS



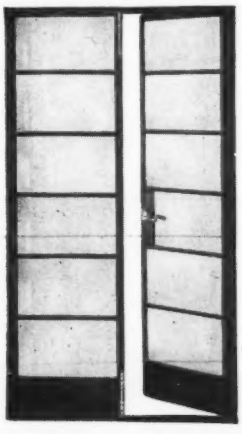
Utility Windows are made of 1 3/8" industrial steel sections tenoned and riveted at the corners.

Ventilators project in at the top. The ventilator is fitted for spring catch which is shipped loose.

Utility Windows are cleaned, Bonderized and painted one priming coat of grey before shipment.

Standard opening size is 2'8 7/8" x 3'6 1/2", and this size is carried in stock by most distributors.

STEEL CASEMENT DOORS



Steel Casement Doors are made of intermediate hot rolled steel casement sections 1 1/4" deep, butt welded at the corners and ground and buffed.

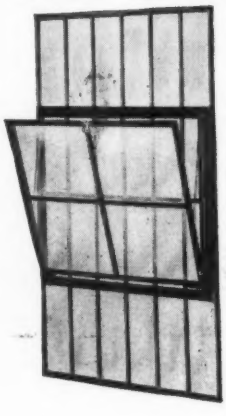
They are made to open out only and are furnished with cylinder lock applied to the active leaf and top and bottom bolts on the inactive leaf.

They are cleaned, Bonderized and painted one priming coat of grey before shipment.

Bronze or aluminum threshold for application to the inside of the door frame may be furnished as an extra. They are shipped unattached.

Standard door size is 3'8 5/8" x 6'9".

STEEL SECURITY WINDOWS



Steel Security Windows are of extra rugged construction. They are designed with an integral grill to protect against entry, while permitting ventilation.

The steel sections used in the outside frame and grill portion are 1 3/8" deep hot rolled bars, and the framing bars of the ventilator are 1 1/2" deep.

Ventilators project inward and are furnished with a spring catch for hand or pole operation.

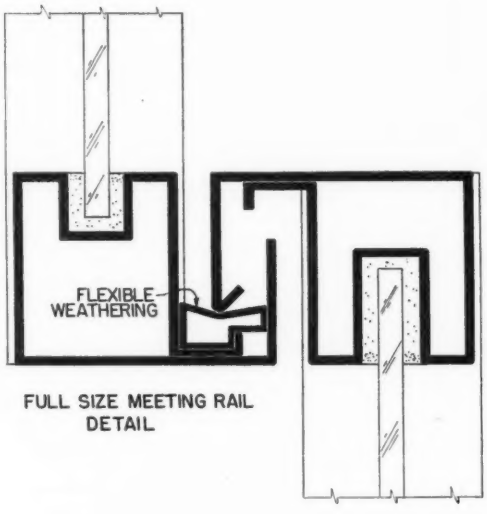
AND STEEL

DOUBLE-HUNG WINDOWS

Double-hung Windows are made in aluminum and steel. (Steel not available until further notice.)

They are shipped completely assembled with weatherstripping and all hardware applied.

Aluminum Windows are especially attractive and while surprisingly low in cost, incorporate features found only in expensive windows. (Note the extra depth of the sash meeting rails.)



FULL SIZE MEETING RAIL DETAIL

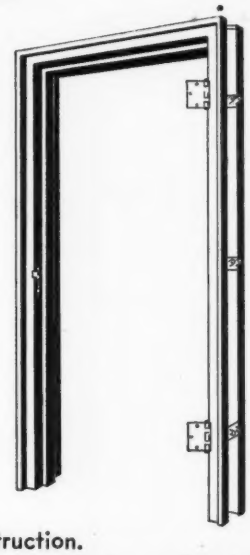
	2'-0"	2'-4"	2'-8"	3'-0"	3'-4"	3'-8"
3'-1½"	20X7 7/8" B2031	24X7 7/8" B2431	28X7 7/8" B2831	32X7 7/8" B3031	36X7 7/8" B3431	40X7 7/8" B3831
3'-9½"	20X9 7/8" B2039	24X9 7/8" B2439	28X9 7/8" B2839	32X9 7/8" B3039	36X9 7/8" B3439	40X9 7/8" B3839
4'-5½"	20X11 7/8" B2045	24X11 7/8" B2445	28X11 7/8" B2845	32X11 7/8" B3045	36X11 7/8" B3445	40X11 7/8" B3845
5'-1½"	20X13 7/8" B2051	24X13 7/8" B2451	28X13 7/8" B2851	32X13 7/8" B3051	36X13 7/8" B3451	40X13 7/8" B3851

THORN WINDOWS

STEEL DOOR FRAMES

DETAIL THRU JAMB OF MOULDED TRIM

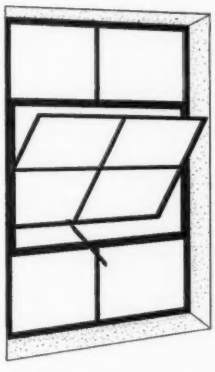
DETAIL THRU JAMB OF PLAIN TRIM



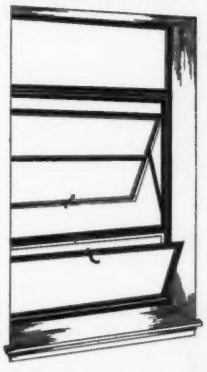
Designed for residential construction.
Shipped knocked down for convenient warehousing.
Assembly is very simple and quick.
Bonderized and prime painted.

STANDARD DOOR FRAME OPENING SIZES				
WIDTH	HEIGHT			
1'-2"	6'-6 5/16"	6'-8 5/16"	6'-10 5/16"	7'-0 5/16"
1'-4"	"	"	"	"
1'-6"	"	"	"	"
1'-8"	"	"	"	"
1'-10"	"	"	"	"
2'-0"	"	"	"	"
2'-2"	"	"	"	"
2'-4"	"	"	"	"
2'-6"	"	"	"	"
2'-8"	"	"	"	"
2'-10"	"	"	"	"
3'-0"	"	"	"	"

PIVOTED WINDOWS



COMMERCIAL PROJECTED WINDOWS



Pivoted and commercial projected Windows are made in aluminum and steel.

Ventilators are double weathered.

Hardware is shipped loose.

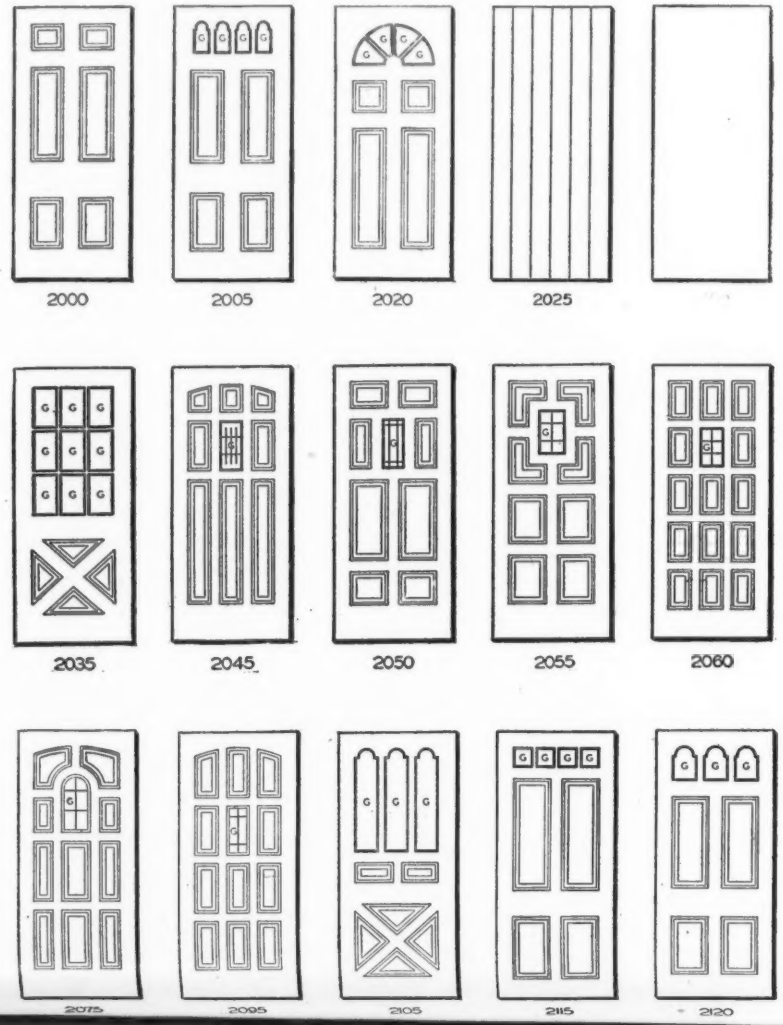
J. S. THORN COMPANY

PHILADELPHIA 32, PENNA.

POPULAR DESIGNS

DOUGLAS FIR TRU-FIT

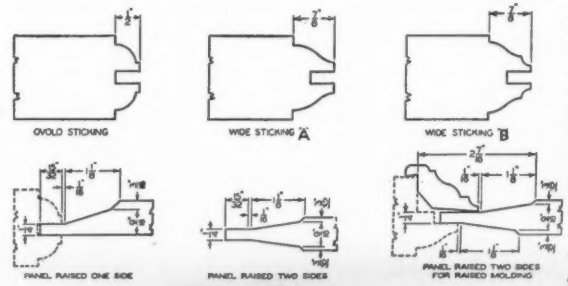
ENTRANCE DOORS



CONSTRUCTION DETAILS

Design No.	Stiles	Top Rail	Lock Rail	Intermediate Rail and Muntins	Bottom Rail	Sticking	Molding
2000	5 3/8"	5 3/8"	11 3/8"	5 3/8"	9 3/8"	Ovolo or wide, A or B	Raised one side, optional
2005	5 3/8"	6 3/8"	9 3/8"	5 3/8"	9 3/8"	Ovolo or wide, A or B panels only	Raised one side, panels only, optional
2020	5 3/8"	5 3/8"	5 3/8"	5 3/8"	9 3/8"	Ovolo or wide, A or B panels only	Raised one side, panels only, optional
2025	5 Equal Grooves—one face. Rotary cut face veneers. Can be furnished with vertical grain face veneers.						
2030	Rotary cut face veneers. Can be furnished with vertical grain face veneers.						
2035	5 3/8"	5 3/8"	7 1/4"		8 3/4"	Ovolo	Not raised
2045	5 3/8"	5 3/8"		3 3/4"	11 3/8"	Ovolo or wide, A or B	Raised one side, optional
2050	5 3/8"	5 3/8"	4 1/2"	4 1/2"	11 3/8"	Ovolo or wide, A or B	Raised one side, optional
2055	5 3/8"	5 3/8"	4 1/2"	4 1/2"	11 3/8"	Ovolo or wide, A or B	Raised one side, optional
2060	5 3/8"	5 3/8"	3 3/4"	3 3/4"	9 3/8"	Ovolo or wide, A or B	Raised one side, optional
2075	5 3/8"	5 3/8"		3 3/4"	11 3/8"	Ovolo or wide, A or B	Raised one side, optional
2095	5 3/8"	5 3/8"		3 3/4"	11 3/8"	Ovolo or wide, A or B	Raised one side, panels
2105	5 3/8"	5 3/8"	7 1/4"	4 1/2"	8 3/4"	Ovolo	Not raised
2115	5 3/8"	5 3/8"	9"	4 1/2"	8"	Ovolo or wide, A or B	Raised one side, optional
2120	5 3/8"	6 3/8"	9 3/8"	5 3/8"	9 3/8"	Ovolo or wide, A or B	Raised one side, optional

STICKING AND PANEL DETAILS



All doors 1 3/4 inches thick.

Glass not furnished.

All panels, raised, solid vertical grain, old growth. Douglas fir.

Doors 3'x6' 8" or 3'x7' as Specified.

Grille furnished on 2045, optional on other models.

Wicket sash furnished for all doors.

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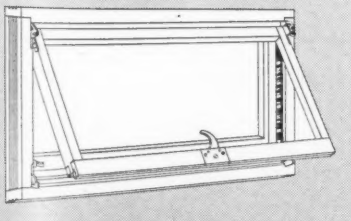
ANDERSEN CASEMENT WINDOW UNITS: outswinging sash, with inside screen and double glazing panels. Extremely weather-tight due to weatherstripping and special sash and frame construction. One-light, horizontal or cut-up glazing.

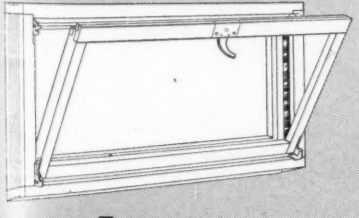
ANDERSEN WINDOWALLS are the product of the Andersen Corporation, window specialists, Bayport, Minnesota. ANDERSEN WINDOWALLS are sold exclusively by wholesale millwork distributors conveniently located throughout the 41 states east of the Rocky Mountains.

*TRADEMARK OF ANDERSEN CORP., BAYPORT, MINN.

CORPORATION • BAYPORT • MINNESOTA • WINDOW SPECIALISTS

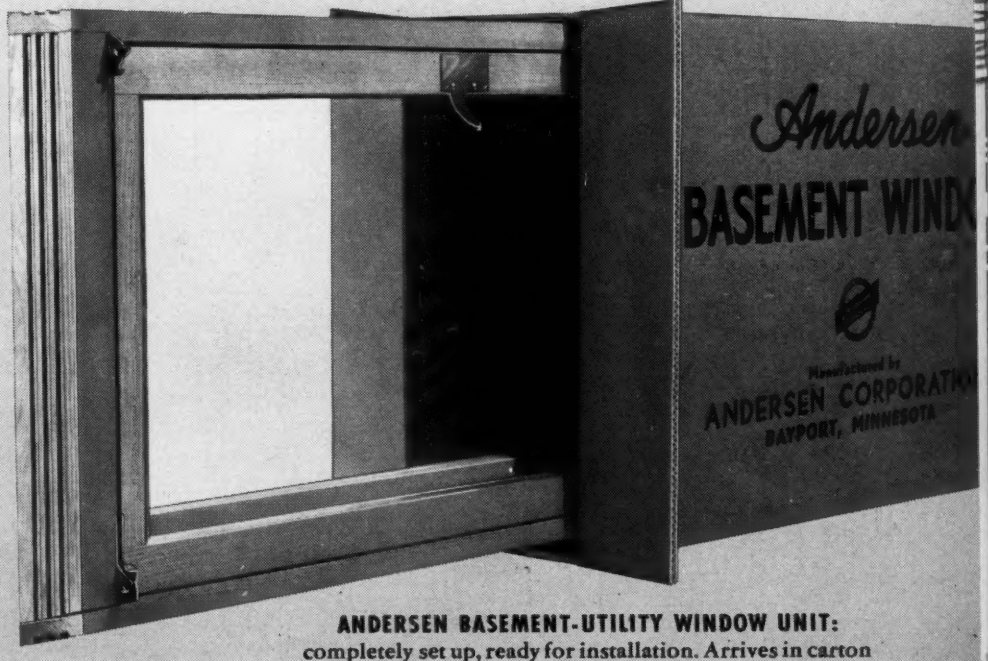


Open at Bottom or . . .



Open at Top

In addition to its usefulness as a basement window, this Andersen unit is an excellent solution to fenestration needs above the ground in a variety of farm, industrial and commercial utility buildings. The unit can be arranged in ribbons of vertical stacks for increased window areas.

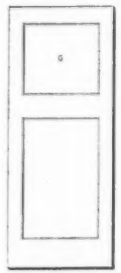


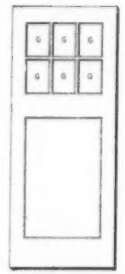
ANDERSEN BASEMENT-UTILITY WINDOW UNIT: completely set up, ready for installation. Arrives in carton pack. Removable sash can be hung at top or bottom. Weatherstripped. Optional screen and storm window.

POPULAR DESIGNS IN DOUGLAS FIR STOCK INTERIOR DOORS

Glass not furnished—Beads for glass included

F162


F110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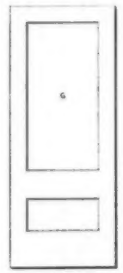
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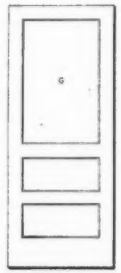
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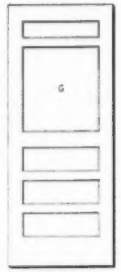
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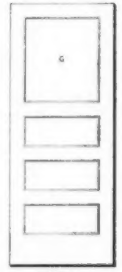
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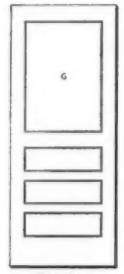
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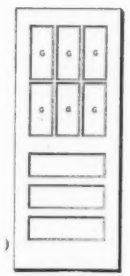
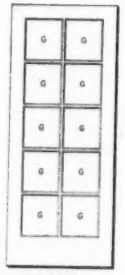

F618

F37

F936M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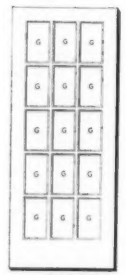

F1535

House Door Thicknesses, 1⅛", 1⅜", 1¾"

GRADE A F.D.I.D.O GRADE B F.D.I.D.O GRADE C F.D.I.D.O GRADE MR F.D.I.D.O

One of these distinctive F.D.I. "grade trade-marks" appears on the bottom of every officially inspected Douglas fir door —and only on doors so inspected. Look for the F.D.I. seal. It is your symbol of fine craftsmanship, backed by rigid inspection.

CONSTRUCTION DETAILS

Design No.	Stiles	Top Rail	Intermediate or Lock Rail	Bottom Rail	Panels	Sticking	Popular Sizes	Grades
F 162	4 9/16"	4 9/16"	4 1/2"	9 3/8"	3-Ply flat or raised	Standard		A and B
F 110	4 9/16"	5 3/8"	7 3/8"	9 3/8"	3-Ply flat	Standard		A and B
F 610	4 9/16"	5 3/8"	7 3/8"	9 3/8"	3-Ply flat	Standard		A and B
F 147	5 3/8"	5 3/8"	9 3/8"	11 3/8"	3-Ply flat or raised	Standard	2'x6" 2'4"x6' 2'6"x6' 2'8"x6' 3'x6' 2'x6'6" 2'4"x6'6" 2'6"x6'6" 2'8"x6'6" 3'x6'6" 2'x6'8" 2'4"x6'8" 2'6"x6'8" 2'8"x6'8" 3'x6'8" *2'x7' *2'4"x7' *2'6"x7' *2'8"x7' *3'x7'	A and B
F 114	4 9/16"	4 9/16"	4 1/2" 5"	9 3/8"	3-Ply flat or raised	Standard		A, B and C
F 117	4 9/16"	5 3/8"	3 3/8" 5 3/8"	9 3/8"	3-Ply flat or raised	Standard		A, B and C
F 214	4 9/16"	4 9/16"	4 1/2" 4 1/2"	9 3/8"	3-Ply flat or raised	Standard		A, B and C
F 118	4 9/16"	5 3/8"	3 3/8" 5 3/8"	9 3/8"	3-Ply flat or raised	Standard		A, B and C
F 618	4 9/16"	5 3/8"	3 3/8" 5 3/8"	9 3/8"	3-Ply flat or raised	Standard	*1 3/4 in. thickness only	A, B and C
F 37	5 3/8"	6 3/8"		18 3/8"		Standard		A and B
F 936M	5 3/8"	5 3/8"		11 3/8"		Standard		A and B
F 1035	4 9/16"	4 9/16"		9 3/8"		Standard		A and B
F 1535	4 9/16"	4 9/16"		9 3/8"		Standard		A and B

your customers will be looking for!

ALUMINUM WINDOWS

IT ASSURES CUSTOMER SATISFACTION... REPEAT BUSINESS FOR YOU!

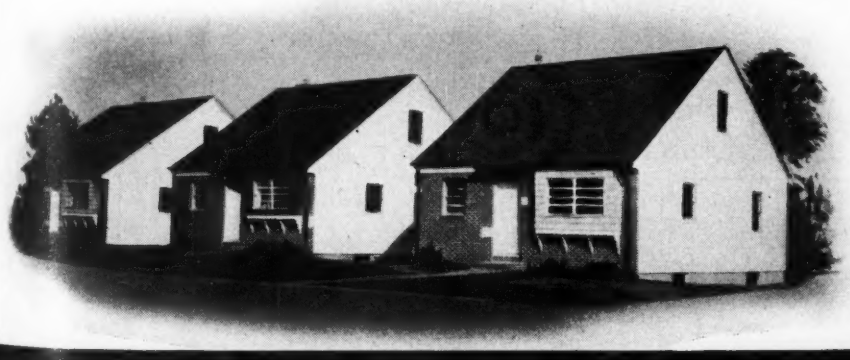
Your customers will be asking for aluminum windows with the "Quality-Approved" Seal on them!

Advertising in leading architectural and builder publications is now featuring this Seal—telling how it protects you and your customers.

The Seal appears only on windows that meet the most rigid specifications—windows that have been tested and approved by the independent Pittsburgh Testing Laboratory for quality materials, strength of sections, soundness of construction, and minimum air infiltration.

When you recommend and sell windows bearing the Seal, you can be sure you're selling quality. Today, this is an important assurance. Your customers, too, are assured of aluminum windows that are good-looking, easy-to-operate, require minimum maintenance, never need painting, give years of trouble-free service.

Sell only aluminum windows bearing the "Quality-Approved" Seal and be sure. You can get them in all standard types. Write for information and names of manufacturers whose windows qualify for the Quality Seal. *Address Dept. L.*



COMPLETELY ASSEMBLED

EASY TO INSTALL

FOR ALL TYPES OF ARCHITECTURE

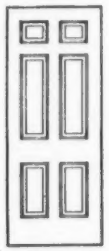
NO PAINTING

Aluminum Window Manufacturers Association

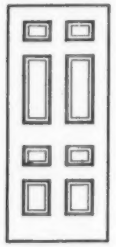
209 CEDAR AVENUE, TAKOMA PARK, WASHINGTON 12, D. C.

STOCK PONDEROSA PINE AND HARDWOOD VENEERED DOORS

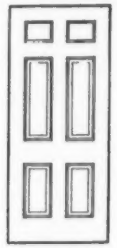
POPULAR PATTERNS OF EXTERIOR DOORS



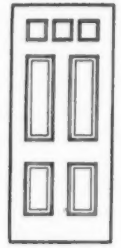
N.D. 110
SIX PANEL
COLONIAL



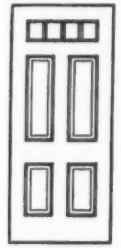
N.D. 112
EIGHT PANEL
COLONIAL



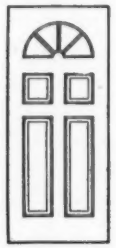
N.D. 596
4 Panel Below
2 Light



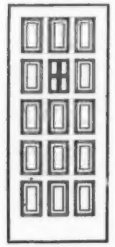
N.D. 597
4 Panel Below
3 Light



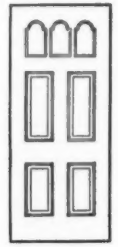
N.D. 598
4 Panel Below
4 Light



N.D. 600

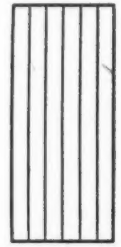


N.D. 605



N.D. 606

PLAIN FLUSH



FLUSH "V" GROOVED

POPULAR SIZES: 2'-6" x 6'-8", 3'-0" x 6'-8", 3'-0" x 7'-0"

CONSTRUCTION DETAILS

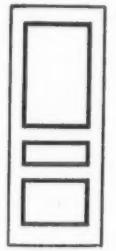
Design No.	Stiles	Top Rail	Cross Rail	Lock Rail	Intermediate Rails	Mullions or Muntins	Bottom Rail	Panels	Glass Size for 2'-8" x 6'-8" Door
*N.D. 110(1)	5½"	5½"	. .	8"	5⅜"	5⅜"	9⅝"	Raised	.. ..
*N.D. 112(1)	5½"	5½"	...	8"	5⅜"	5⅜"	9⅝"	Raised	.....
*N.D. 596(2)	5½"	5½"	5⅜"	8"	..	5⅜"	9⅝"	Raised	8¾" x 7⅛"
*N.D. 597(2)(3)	5½"	5½"	5⅜"	8"	....	5⅜"	9⅝"	Raised	5¾" x 7⅛"
*N.D. 598(2)(4)	5½"	5½"	5⅜"	8"	....	5⅜"	9⅝"	Raised	5⅛" x 7⅛"
N.D. 600	*5½"	5½"	Top 5⅜"	.. .. ..	4⅝"	4⅝"	9⅝"	Raised	22" x 11"
N.D. 605	4¾"	4¾"	2⅝"	.. . .. .	. ..	2⅝"	9⅝"	Raised	6¾" x 11⅞"
*N.D. 606(5)	5½"	5½"	5⅜"	8"	...	5⅜"	9⅝"	Raised	. 6¾6" x 9"
Flush Plain	If desired, light openings may be cut in these doors to suit wishes of purchaser.								
Flush "V" Grooved	If desired, light openings may be cut in these doors to suit wishes of purchaser.								

NOTES: (1) Panel thickness ¾". Height of top panel over-all 7⅛" (2) Panel thickness ¾". (3) Bars between glass 3½". (4) Bars between glass 1½". (5) Bars between glass 1½" to 3½".
*Bottom and lock rails may be reversed when specified.

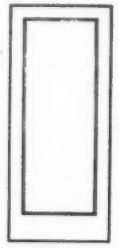
OTHER PONDEROSA PINE STOCK DOORS AVAILABLE

No attempt has been made in this catalog to illustrate all the types and patterns of Ponderosa Pine standard stock doors that are available. Only the more popular patterns of interior doors, exterior doors and combination doors are shown. For data on other types and designs, including garage doors, cupboard doors, storm doors, toilet doors, blind or summer doors and sidelights write the National Door Manufacturers Association, 322 South Michigan Avenue, Chicago 4, Illinois.

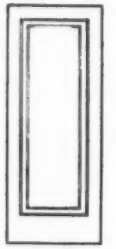
POPULAR PATTERNS OF INTERIOR DOORS



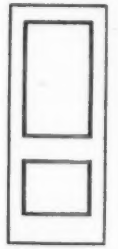
N.D. 99
THREE PANEL



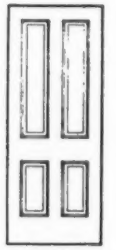
N.D. 100
ONE PANEL



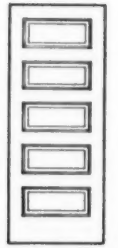
N.D. 101
INNER FRAME



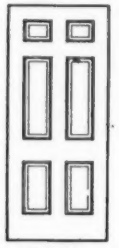
N.D. 102
TWO PANEL



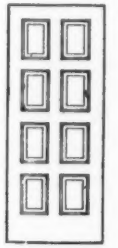
N.D. 106
FOUR PANEL



N.D. 107
FIVE CROSS PANEL



N.D. 108
SIX PANEL COLONIAL



N.D. 109
EIGHT PANEL

CONSTRUCTION DETAILS

Design No. N.D. 99	Stiles 4¾"	Top Rail 4¾"	Cross Rail 4⅝"	Lock Rail 4⅝"	Intermediate Rails	Mullions or Muntins	Bottom Rail 9⅝"	Panels Flat
N.D. 100	4¾"	4¾"	.....	.....	.....	.....	9⅝"	Flat
N.D. 101	4¼" Face	4¼" Face	.. ..	.....	.....	.....	9¼" or 9½" Face	Flat
N.D. 102	4¾"	4¾"	.....	8"	.....	.. ...	9⅝"	Flat
*N.D. 106	4¾"	4¾"	.....	8"	. ....	4⅝"	9⅝"	Raised
*N.D. 107	4¾"	4¾"	.....	.....	4⅝"	.....	9⅝"	Raised
N.D. 108 (1)(2)(3)	4¾"	4¾"	.....	8"	3⅞" or 4⅝"	3⅞" or 4⅝"	9⅝"	Raised
N.D. 109(2)	4¾"	4¾"	.. ..	....	3⅞" or 4⅝"	3⅞" or 4⅝"	9⅝"	Raised

NOTES: (1) Height of Top Panels Overall 7⅛" (2) Doors 1'-6" are made 1 Panel Wide.
(3) Bottom and lock rails may be reversed when specified.
*Also for exterior use.

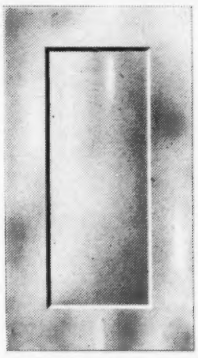
POPULAR SIZES				
1'-6" x 6'-6"	2'-0" x 6'-8"	2'-4" x 6'-8"	2'-6" x 6'-8"	2'-8" x 6'-8"
1'-6" x 6'-8"	2'-0" x 7'-0"	2'-4" x 7'-0"	2'-6" x 7'-0"	2'-8" x 7'-0"
2'-0" x 6'-0"	2'-4" x 6'-0"	2'-6" x 6'-0"	2'-8" x 6'-0"	3'-0" x 6'-8"
2'-0" x 6'-6"	2'-4" x 6'-6"	2'-6" x 6'-6"	2'-8" x 6'-6"	3'-0" x 7'-0"

Packaged for PROFIT *by* GREGG

● Your customers will appreciate the beauty, quality and workmanship of this GREGG Millwork. There is none better. Attractive designs; made of Ponderosa Pine; "Woodlife" treated; sturdy construction, quantity produced at substantial savings, every item is an outstanding value.

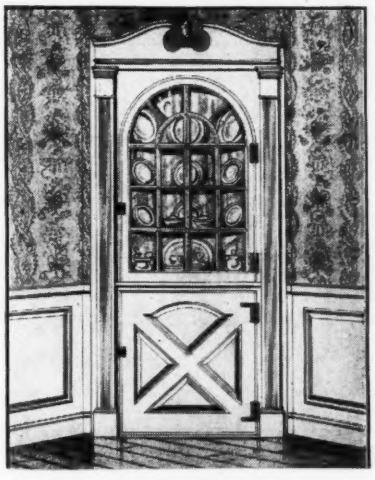
For you, as a dealer, the individual packaging means easy handling, easy storing, no loss through damage — and quick turnover—the secret of profits.

Catalogs and prices are available to dealers only.



● Inexpensive panel type Cupboard Doors; Ponderosa Pine stiles and rails, plywood panel; hardwood dowelled. Reversible. Full range of sizes.
Corrugated packaging.

● Sectional Kitchen Cabinets. Floor and wall units, cupboards, drawers. Wide range of sizes and styles.
Individually cartoned.



● Corner Cabinets in a variety of styles for rooms of modern or formal design. KD except fronts.
Individually packaged.

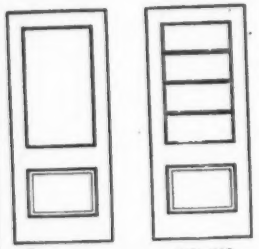
SON, INC.

Nashua, New Hampshire

QUALITY SINCE 1719

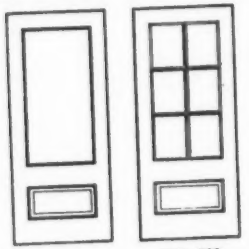
STOCK PONDEROSA PINE AND HARDWOOD VENEERED DOORS

POPULAR PATTERNS OF EXTERIOR DOORS



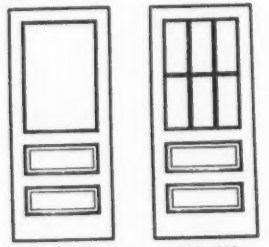
N.D. 500 N.D. 506

Above 1 light design N.D. 500 can be divided as in Design N.D. 506 or other divisions are available as listed below.
N.D. 501— 6 lts., 2 w.
N.D. 502— 9 lts., 3 w
N.D. 505 12 lts., 3 w



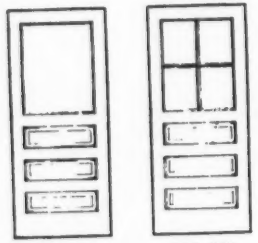
N.D. 507 N.D. 508

Above 1 light design N.D. 507 can be divided as in Design N.D. 508 or other divisions are available as listed below:
N.D. 509 - 9 lts., 3 w.
N.D. 510— 8 lts., 2 w.
N.D. 511— 9 marg. lts.
N.D. 512 12 lts., 3 w.



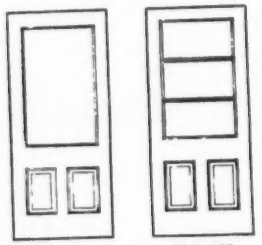
N.D. 514 N.D. 516

Above 1 light design N.D. 514 can be divided as in Design N.D. 516 or other divisions are available as listed below:
N.D. 513— 3 hor. lts.
N.D. 515— 4 lts., 2 w.
N.D. 517— 9 lts., 3 w.
N.D. 519— 3 vert. lts.



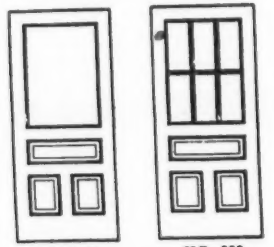
N.D. 537 N.D. 538

Above 1 light design N.D. 537 can be divided as in Design N.D. 538 or other divisions are available as listed below:
N.D. 536—3 hor. lts
N.D. 539—6 lts., 3 w
N.D. 542—3 vert. lts.



N.D. 559 N.D. 563

Above 1 light design N.D. 559 can be divided as in Design N.D. 563 or other divisions are available as listed below:
N.D. 560—4 lts., 2 w.
N.D. 561—6 lts., 2 w.
N.D. 562 - 9 lts., 3 w.



N.D. 567 N.D. 569

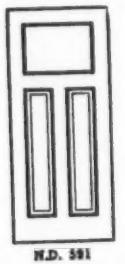
Above 1 light design N.D. 567 can be divided as in Design N.D. 569 or other divisions are available as listed below:
N.D. 568—4 lts., 2 w.
N.D. 570—9 lts., 3 w

CONSTRUCTION DETAILS

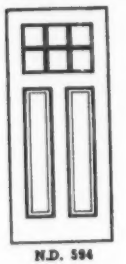
Design No.	Stiles	Top Rail	Cross Rail	Lock Rail	Intermediate Rails	Mullions or Muntins	Bottom Rail	Panels	Glass Size for 2'-8" x 6'-8" Door
*N.D. 500	5½"	5½"	.....	9⅜"	.....	.....	9⅜"	Raised	22" x 40"
*N.D. 506	5½"	5½"	.....	9⅜"	.....	.....	9⅜"	Raised	22" x 9⅜"
*N.D. 507	5½"	5½"	.....	9⅜"	.....	.....	9⅜"	Raised	22" x 46"
*N.D. 508	5½"	5½"	.....	9⅜"	.....	.....	9⅜"	Raised	10¾" x 15"
N.D. 514	4¾"	4¾"	.....	4⅜"	4⅜"	.....	9⅜"	Raised	23½" x 36"
N.D. 516	4¾"	4¾"	.....	4⅜"	4⅜"	.....	9⅜"	Raised	7½" x 17⅜"
N.D. 537	4¾"	4¾"	4⅜"	.....	.....	.....	9⅜"	Raised	23½" x 30"
N.D. 538	4¾"	4¾"	4⅜"	.....	.....	.....	9⅜"	Raised	11⅛" x 14⅜"
N.D. 559	4¾"	4¾"	.....	8"	.....	4⅜"	9⅜"	Raised	23½" x 40"
N.D. 563	4¾"	4¾"	.....	8"	.....	4⅜"	9⅜"	Raised	23½" x 13"
N.D. 567	4¾"	4¾"	4⅜"	.....	.....	4⅜"	9⅜"	Raised	23½" x 34"
N.D. 569	4¾"	4¾"	4⅜"	.....	.....	4⅜"	9⅜"	Raised	7½" x 18¾"

POPULAR SIZES: Nos. N.D. 500, 506, 507, 508 are 2'-8" x 6'-8", 3'-0" x 6'-8", 3'-0" x 7'-0"
Nos. N.D. 514, 516, 537, 538, 559, 563, 567, 569 are 2'-6" x 6'-6", 2'-8" x 6'-8", 3'-0" x 6'-8", 3'-0" x 7'-0"
*8" Lock Rail furnished when specified.

POPULAR PATTERNS OF EXTERIOR DOORS

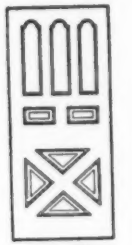


N.D. 591



N.D. 594

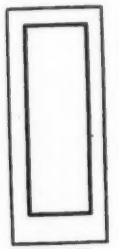
Above 1 light design N.D. 591 can be divided as in Design N.D. 594 or other divisions are available as listed below:
N.D. 592—3 vert. lts.
N.D. 593—4 vert. lts.



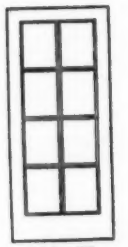
N.D. 608

N.D. 612

POPULAR SIZES
Nos. N.D. 591, 594, 608, 612
2'-8" x 6'-8", 3'-0" x 6'-8", 3'-0" x 7'-0"



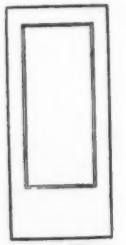
N.D. 620



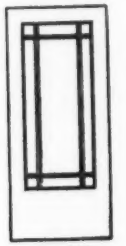
N.D. 622

Above 1 light design N.D. 620 can be divided as in Design N.D. 622 or other divisions are available as listed below.
N.D. 623— 9 marg. lts.
N.D. 625—10 lts., 2 w.
N.D. 626—12 lts., 3 w.
N.D. 627—15 lts., 3 w.
N.D. 630 — 5 hor. lts.

POPULAR SIZES
Nos. N.D. 620, 622
2'-0" x 6'-8", 2'-6" x 6'-8", 2'-8" x 6'-8"



N.D. 635



N.D. 638

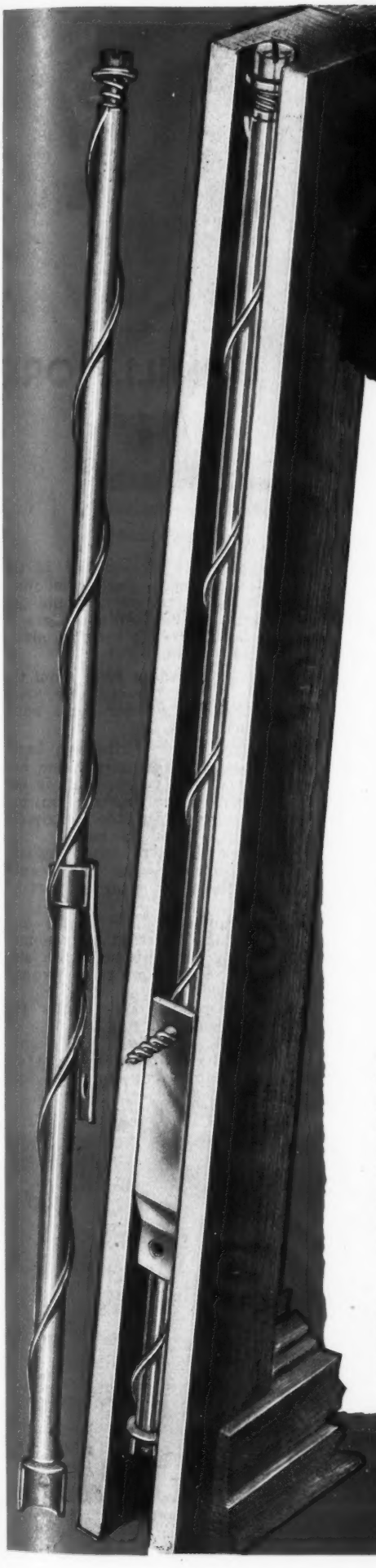
Above 1 light design N.D. 635 can be divided as in Design N.D. 638 or other divisions are available as listed below:
N.D. 636— 3 vert. lts.
N.D. 637— 8 lts., 2 w.
N.D. 640—10 lts., 2 w.
N.D. 641—12 lts., 3 w.
N.D. 642—15 lts., 3 w.
N.D. 644— 5 hor. lts.

POPULAR SIZES
Nos. N.D. 635, 638
2'-8" x 6'-8", 3'-0" x 6'-8", 3'-0" x-7'-0"

CONSTRUCTION DETAILS

Design No.	Stiles	Top Rail	Cross Rail	Lock Rail	Intermediate Rails	Mullions or Muntins	Bottom Rail	Panels	Glass Size for 2'-8" x 6'- 8" Door
N.D. 591(1)	4¾" or 5½"	4¾" or 5½"	4⅜" or 5⅜"	.....	.....	4⅜" or 5⅜"	9⅜"	Raised	22" x 18"
N.D. 594(1)	4¾" or 5½"	4¾" or 5½"	4⅜" or 5⅜"	.....	.....	4⅜" or 5⅜"	9⅜"	Raised	7" x 8¾"
N.D. 608(2)	4¾"	4¾"	4⅜"	9⅜"	.....	4⅜"	8¾"	Raised	6⅛" x 26⅞"
N.D. 612(3)	5½"	5½"	.....	7"	.....	5⅜"	8¾"	Raised	7" x 12"
*N.D. 620	4¾"	4¾"	.....	.....	.....	.....	9⅜"	.....	23½" x 66½"
*N.D. 622	4¾"	4¾"	.....	.....	.....	.....	9⅜"	.....	11½" x 16¼"
N.D. 635	5½"	6½"	.....	.....	.....	.....	18½"	.....	22" x 56"
N.D. 638	5½"	6½"	.....	.....	.....	.....	18½"	.....	5" x 5" (Cor. lts.)

NOTES: (1) Glass sizes shown are for doors with 5½" stiles. (2) Panel thickness 1⅛". Bars between glass 3½" (3) Panel thickness 1⅛"
*Also for interior use.



Everybody likes Hidalift

the 100% concealed sash balance

THE ARCHITECT is all smiles because with Hidalift he can design more beautiful windows without unsightly parts of balances showing.

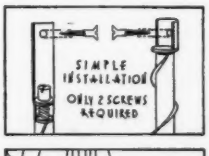
THE BUILDER is all for Hidalift because he knows it's faster and easier to install.

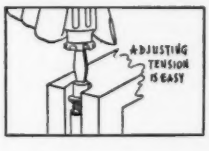
THE HOMEOWNERS love Hidalift because of its positive action, ease of operation and lifetime wear.

WE (at T & S) like Hidalift because our faith in its superiority has been proven by its amazing sales record.

HIDALIFT HAS ALL THE DESIRABLE FEATURES A TRULY MODERN SASH BALANCE SHOULD HAVE

- BETTER ARCHITECTURAL DESIGN (Less bulky)
- SPRINGS DUSTPROOF (Sealed inside tube)
- EASY INSTALLATION (Only 2 screws required)
- LIFETIME WEAR (Laboratory proven)
- EASY TENSIONING (Exclusive non-slip jiffy clutch)
- NO SASH CORDS TO BREAK
- ELIMINATES SASH WEIGHTS (No noise)
- NO DRAFTY SASH WEIGHT BOXES
- SELF-CENTERING FOLLOWER: bronze bushing





WRITE FOR illustrated folder which includes all installation details and lists sizes and specifications on Hidalift for all standard sash. Use coupon below or your own letterhead.

HIDALIFT DIVISION —
The Turner & Seymour Mfg. Co., Torrington, Conn.

Gentlemen:

- ☐ Send complete literature and prices on Hidalift
- ☐ Send sample Hidalift
- ☐ Send name of nearest distributor

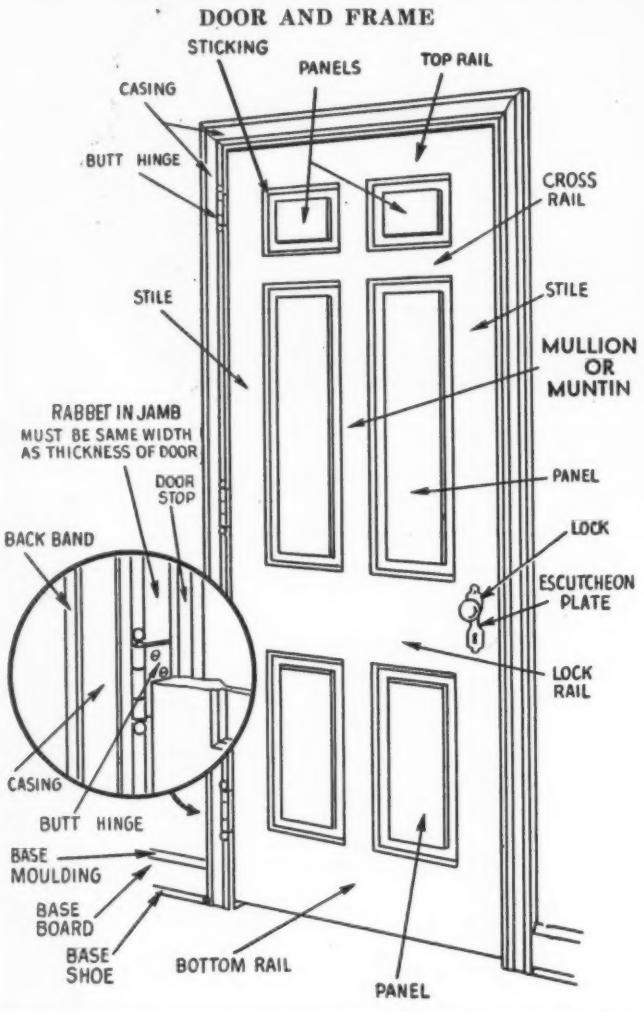
*Name*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

T&S TORRINGTON

Starting Our Second Century



been thoroughly treated with a fire retardant chemical that is able to withstand extremely high temperatures for a prolonged period of time. The veneer faces are standard. When subjected to direct flame, the veneer quickly burns away but the core withstands the flame effectively.

Another type has a layer of asbestos cloth incorporated between the core and the layer of crossband veneer which provides the necessary fire retardant qualities.

MILLWORK

In addition to the items of millwork covered in the preceding subsections headed "doors," and "windows," there are such important items as cabinets, mouldings, stairwork, mantels, and interior trim. Retail dealers of building materials are fully familiar with these products as they have handled them for years.

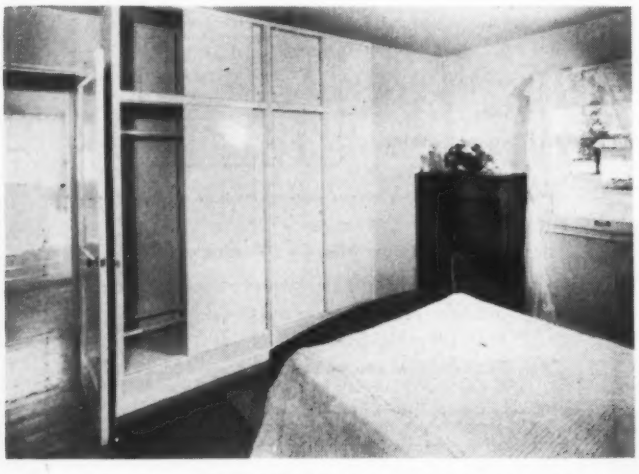
One of the most important of these to him, from the standpoint of merchandising, is the present day stock cabinet, and in this field there have been some noteworthy developments in recent years.

The demand for built-in cabinets for kitchens, bathrooms and practically every other room in a home has been tremendous during the past few years. This is not only due to the high rate of new home construction, but also because the modern family wants the maximum convenience, comfort, and utility from its home.

From the standpoint of more effective space utilization, these cabinets offer the utmost, plus the beauty and style necessary to make them an integral part of any decorative scheme.

Manufacturers of kitchen cabinets, both metal and wood, have adapted their products so that a combination of them can be installed in any kitchen, with any or all appliances, so that the completed room is one harmonious, highly efficient whole.

Corner cupboards for dining rooms, snack bars for the breakfast nook, bookcases, and storage cabinets of many types are available as stock items, and it is highly desirable that the dealer be familiar with them and their many uses, so as to be better able to recommend and sell them to his customers.



WHETHER it be for the decoration of a basement play room, or a cabinet for other rooms in the home, the millwork industry has provided a full selection of quality products exactly suited to the job.

DOUBLE-HUNG

ALUMINUM WINDOWS

builders prefer!

Only "post-war" building product that adds visible sales appeal to houses . . . *inside and outside!*

Builders everywhere want ALWINTITE windows because they are easy to handle—easy to install—and because they add extra sales appeal that customers can see—that is easy to demonstrate. But that's not all . . .

Builders find that ALWINTITE actually saves them money—cuts construction time and costs—gives them a lower "installed-cost" per opening.

That's why ALWINTITE is the fastest selling double-hung aluminum window on the market today—why you should establish yourself now as headquarters for ALWINTITE in your area.

Backed by more than 35 years' experience in fine window manufacture, ALWINTITE offers you everything—good basic window design—strong, extruded members—precision manufacture—a complete line of window products—unlimited production capacity—a good profit margin—and a dealer sales policy that helps you make money.

You can recommend and sell ALWINTITE with complete confidence. It's the type of building product that creates customer satisfaction and profitable repeat business for you. Investigate. Write today for details. Address Dept. AL.

THE ALUMINUM WINDOW CORPORATION

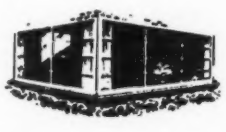
A Subsidiary of General Bronze Corporation

801 STEWART AVENUE, GARDEN CITY, NEW YORK

Only ALWINTITE **offers you this complete line . . . *from one source***

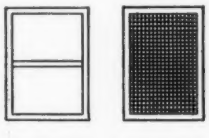
AVAILABLE FOR IMMEDIATE DELIVERY!

MULLION WINDOWS



For interesting groups of 2, 3 or more windows, for corner windows and for bay windows, ALWINTITE mullions (90°, 135° and 180°) add smart, trim lines and distinctive beauty to any building.

STORM SASH AND SCREENS



ALWINTITE full-length screens, as well as storm sash, made in 2 sections (upper and lower units) with interchangeable screen sections are available for all sizes of ALWINTITE windows.

PICTURE WINDOWS

ALWINTITE picture windows are available in 15 stock sizes to fit our standard widths and heights. Can be used independently or flanked by ALWINTITE double-hung windows. Will take ¼" plate glass or double glazing.

BASEMENT WINDOWS

ALWINTITE basement windows, made from heavy extruded aluminum sections, are strong and sturdy. They are top hung and swing in from the bottom. Special basement window screens to fit are also available. 3 stock sizes: 2' 8⅞" x 1' 2¾", or 1' 6¾", or 1' 10¾".

"BUILD RIGHT WITH ALWINTITE"

NOTE how harmoniously the above built-in clothes cupboard blends into the wall, and that it is designed to take maximum advantage of the space it occupies.

THREE-POINT MERCHANDISING PROGRAM

Trained Personnel

The merchandising of stock millwork means more than simply carrying it in stock. First and foremost it means that the lumber yard must have at least one good millwork man who knows how to take off a complete and accurate list of millwork items from a set of plans. This is essential. The lumber dealer who is not equipped to do this is at distinct disadvantage. His only recourse is to call in an estimator from some nearby millwork jobber or distributor. This may entail several days or even weeks of delay. That's the first disadvantage. The next is that if the dealer has to depend upon the wholesaler to take off the millwork bill, he is under obligation to buy the millwork from that wholesaler. Furthermore, it costs the wholesaler something to send a man out to do the estimating. That cost must either be loaded upon the cost of the millwork or taken out of the dealer's profit. That's another great disadvantage. Hence the successful lumber dealer will readily see the necessity of having a proficient millwork man in his organization to perform this function. That's the starting point in good millwork merchandising.

Sell Quality Merchandise

The next important step is to provide the quality and design of millwork which fits the house or other building for which it is intended. Manufacturers of stock millwork have made great strides in the past decade.

Stock woodwork producers, equipped with high-speed precision machinery, are now turning out the best woodwork ever offered the public. Preservative treatment has added many years of life to stock woodwork by making it immune to termites and decay organisms. Designed by experts, present-day stock woodwork is architecturally suited to every conceivable type or style of home or other building.

Manufacturers of metal windows have developed factory assembled frame and sash units that are prime painted and can be installed by unskilled workers. Their well-styled, precision manufactured windows are backed by heavy national advertising.

It is therefore the responsibility of the lumber dealer to assure his customers that the millwork offered is perfectly suited to his purpose and is the best that money can buy. Well informed dealers know where the best high-grade millwork is produced and know, also, that they are stocking that kind. They know, furthermore, that they will never have to apologize for having supplied such millwork on any job. Thus, the second element in successful merchandising is to stock and sell quality millwork perfectly suited to the customers' needs.

Advertise, Display, Demonstrate

Lastly, tell the public about your millwork. Advertise it. Display it. Demonstrate it.

AN ADEQUATE STOCK OF MILLWORK

No list can be made to fit all lumber dealers. The stock of millwork a dealer should carry depends upon many important factors. First, and most important, is the probable market demand. To find the logical answer to this question, the dealer must make frequent surveys of his market. He must know about how many new houses—or other buildings—are being planned for his community for the current building season, and how much repair and replacement. Close cooperation with his carpenters, contractors and other builders will enable him to determine about how much building there will be and how much millwork required.

An average six-room house will require two or three exterior doors and six to eight interior doors and from 14 to 18 windows as a minimum, with screens and storm sash for most of the window openings and combination doors for exterior door openings. These requirements necessarily vary between localities and every dealer should determine what the average requirement is in his locality. Having determined the approximate market for millwork, the lumber dealer should next determine how many of the prospective jobs he will get and, therefore, how much millwork he will probably sell. Most successful dealers plan to have a 60-day stock on hand under normal conditions. This will give him a six-time turnover for the year.

During periods of heavy demand and short supply such as most dealers have faced since World War II, skillful planning is largely impossible because of shortages. Obviously, therefore, the above suggestions as to adequate stocks are not intended to apply to those abnormal conditions. But the time will come when supply will again equal and exceed the demand. Wise dealers will see the necessity of planning ahead for that time. The main point to keep in mind is that the successful dealer, under normal conditions, always carries a stock of millwork reasonably commensurate with the needs of his market. This enables him to make prompt deliveries and give good service, which will be impossible if he depends upon some out-of-town supplier for his day-to-day needs.

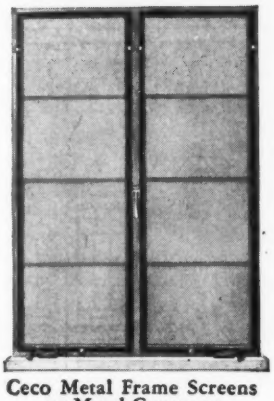
CARE OF WOODWORK

One of the most important elements in the merchandising of woodwork is its care—not only after it has been installed in the building, but while in the process of storage or transportation before it reaches the consumer. Progressive retail lumber dealers are recognizing this fact more and more as the months and years go by. In case of failure of woodwork in the home, the lumber dealer who sold it is the first to be criticized. The fault may or may not be his, but he must shoulder the blame notwithstanding. Hence it is important that a few simple rules be made a part of every dealer's "sales talk" relating to stock woodwork. Here are the principal rules:

1. Store millwork inside, never outside. Exposure to the elements deteriorates the quality and may cause warping.
2. Never lay woodwork on an uneven surface. Doing so may cause twisting or other distortions. Always lay or hang woodwork flat.
3. When moving or transporting, protect edges by scuff strips or similar protection.
4. Millwork should not be delivered to the job until facilities for inside storage are available. It should never stand outdoors.
5. Never hang a door in a frame that is not straight and true. A twisted or warped frame means a twisted or warped door eventually.
6. Woodwork should never be installed when the house is wet or damp either from the elements or from freshly applied plaster.
7. Woodwork should be painted with three coats of white lead and oil or quality mixed paint. It should be repainted whenever necessary.
8. Tops, bottoms and edges of sash and doors should be fully painted before installation.

for METAL BUILDING MATERIALS...

METAL FRAME SCREENS



Ceco Metal Frame Screens on Metal Casement

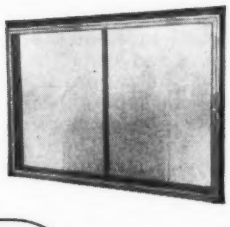
Ceco Metal Frame Screen on Wood Window

Ceco offers a complete line of metal frame screens in steel, bronze or aluminum—for metal or wood windows. There is a Ceco screen for any opening.

STORM PANELS

ALUMINUM COMBINATION STORM-PANEL-AND-SCREEN UNIT FOR WOOD WINDOWS

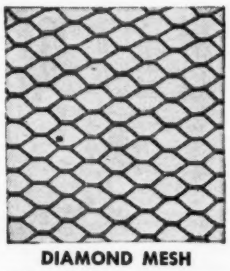
ALUMINUM FRAME STORM PANELS FOR METAL CASEMENTS



Combination Storm-Panel-and-Screen Unit for Ceconomy and Ezee-Action Basement Windows

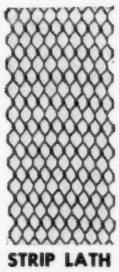
METAL LATH AND ACCESSORIES

Ceco offers dealers a complete line of metal lath and accessories. A few of the Ceco items are shown below. Ask for full particulars.



DIAMOND MESH

2.5 or 3.4 lbs. per square yard, copper alloy steel painted. Also available in self-furring. May be had in galvanized steel, 3.4 lb.



STRIP LATH

Made from 2.5 lb. Diamond Mesh, 3″ wide x 8′ long. Made from Copper alloy steel painted.

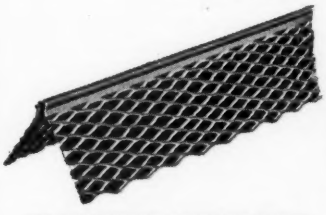
CORNA LATH

Made from 2.5 lb. Diamond Mesh. 2 x 2″ or 3 x 3″, in 8′ lengths. Copper alloy steel painted.

RIB LATH

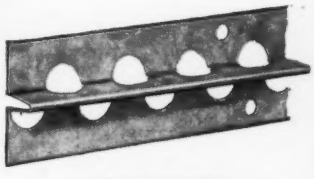
Ribs	⅛″	⅜″	¾″
Wt.	2.75 Sq. Yd. 3.40 Sq. Yd.	3.4 Sq. Yd. 4.0 Sq. Yd.	.60 Sq. Ft. .75 Sq. Ft.

All copper alloy steel painted only



1A EXPANDED CORNER BEAD

Rigid, yet provides plaster keys right up to nose. Made from galvanized steel. Comes in 8, 9, 10 and 12′ lengths.



6A BASE SCREED

Made in ½″ grounds, 10′ lengths. Galvanized steel.

OTHER PRODUCTS

OTHER TYPICAL CECO PRODUCTS INCLUDE:

Louvre Ventilators • Zinc Moulding • Corrugated Roofing Aluminum Roofing • Ridge Roll • Eaves Drip and other Roofing Accessories • Steel Joists.

CECO STEEL

makes the big difference

CECO STEEL PRODUCTS CORPORATION
GENERAL OFFICES: 5601 W. 26th St., Chicago 50, Ill.
Offices, warehouses and fabricating plants in principal cities

MILLWORK DEFINITONS

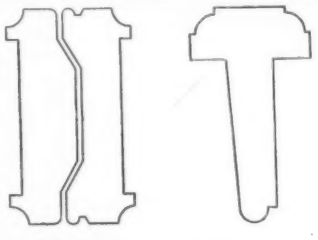
ATTIC ACCESS STAIRS—Disappearing Type: The trend toward one-story houses in recent years has placed attic access stair units in a prominent position as an item for the building products merchant to supply. There are a number of unique units on the market, each complete as an assembly ready for installation.

These easily installed stair units swing up into the stair well when not in use; are easily pulled into position; and offer easy access to additional storage or recreation room in the home that would otherwise be inaccessible.

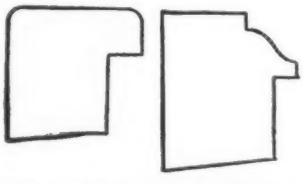
ACCESS DOOR—A door which opens to concealed equipment or seldom-used part of a building, such as a door to permit access to concealed plumbing.

APRON—Material which by shape or use suggests an apron. (a) The horizontal piece of wood trim, plain or moulded, to finish below the stool of a window; (b) A strip, usually of lead, attached to a wall to overlap the flashing and to protect a joint; (c) A piece of board for conducting loose material past an opening. See Window.

ASTRAGAL—Mouding attached to one of a pair of swinging doors against which the other door strikes. Astragals for sliding doors are designed male and female—one is placed on the door and the other on the jam for single doors and one on the meeting edge of each door in a pair. Also a sash bar. Also a small semi-circular moulding or bead encircling a column or post below the capital.



BACK BAND—Moulding used on the side of a door or window casing for ornamentation or to increase the width of the trim.



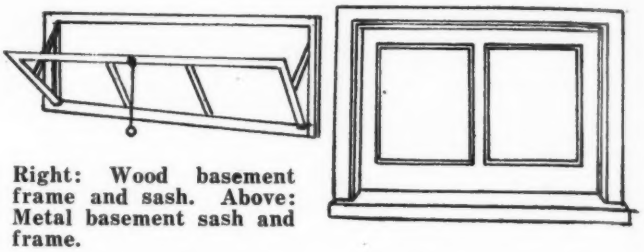
BALUSTRADE—A row of small balusters supporting a coping or cornice and forming a parapet or enclosure.

BASE (ROOM)—A flat piece of finish lumber frequently moulded on one edge and from four to eight or even ten inches in height. It is installed to provide a finish at the junction of wall and floor and to protect the plaster, or whatever wall finish is used, against the taking of harm when the floor is scrubbed or mopped. Another common name for base is "mop-board". Base is almost always laid with a small molding called a "shoe" at the intersection of base and floor. The shoe being small enough to bend, any slight variation from a straight line that might occur either in base or floor is covered by the shoe. In other words the use of the base shoe obviates the necessity of scribing the base to the floor. A two member base consists of base and shoe. In some of the older houses the base is topped by a moulding similar to a panel moulding which is laid on along the top edge and either mitered or coped at the corners of the room. A three member base is the base with both shoe and base moulding.

BALUSTERS—Small spindles or columns forming the main part of a railing for stairway or balcony, fastened between a bottom and top rail.

BASE SHOE—Moulding used next to the floor on interior base board. Sometimes called a carpet strip.

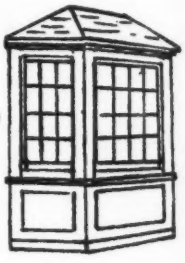
BASEMENT FRAMES AND SASH—Wood or metal windows.



Right: Wood basement frame and sash. Above: Metal basement sash and frame.

BASE MOULDING—Moulding used to trim the upper edge of interior base board.

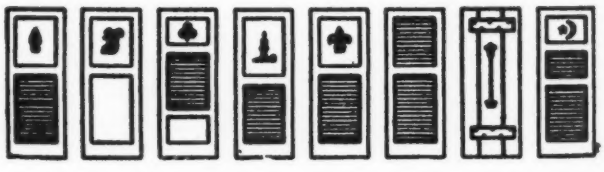
BAY WINDOW—A window placed in the bay or "bow" of a building.



BED MOULDING—A moulding in an angle, as between the overhanging cornice, or caves, of a building and the sidewalls.

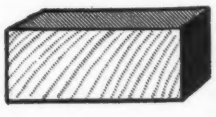
BETWEEN GLASS—The thickness of a member between two lights of glass.

BLINDS—(SHUTTERS)—Light, wooden sections in the form of doors to close over windows to shut out light, give



protection or add temporary insulation. Commonly used now for ornamental purposes, in which case they are fastened rigidly to the building. See House Cross Section.

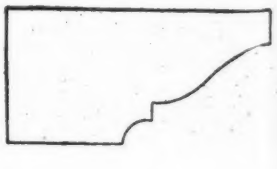
BLIND STOP—A rectangular moulding, usually ¾"x1⅜", used in the assembly of a window frame. See Window.



BOXED STAIRS—Stairs which pass from one floor to the next between two walls. Neither side of the stair is open and there is no balustrade unless one is needed around the well hole on the upper floor. A boxed stair is very often boxed from the first floor clear through to the ceiling of the second floor, in which case there would be no well hole exposed and, of course, no balustrade. Often a plain round hand rail is placed along the wall on either, or both sides. These hand rails are supported by brackets, usually of metal, attached to the wall.

BULL NOSED TREAD—A common but incorrect term applied to what is more properly called "Circle and tread."

CAP MOULDING—Moulding used at the top of window and door trim to ornament the plainness of the trim.



COMMERCIAL AND INDUSTRIAL

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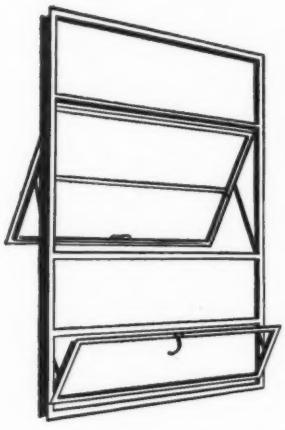
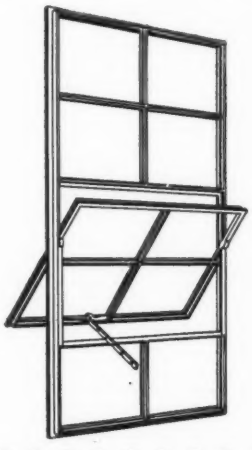
Mesker Horizontal Pivoted and Commercial Projected Windows are quality constructed of heavy 1½" deep steel sections. No steel shape in the entire window is less than ⅛" thick. Corner joints are mortised and tenoned, riveted, and then welded in addition. Muntin joints are all interlocked. All sash are given the Mesker Bonded Finish, then prime-coated with phenolic resin paint.



ARCHITECTURAL PROJECTED

Mesker Architectural Projected Windows are especially made for use in schools, factory offices, banks, stores and public buildings. Awning and hopper ventilators provide abundant fresh air without drafts. Strong steel members 1¾ inches deep insure permanent weathertightness. Trim lines admit maximum daylight per square foot of window opening.

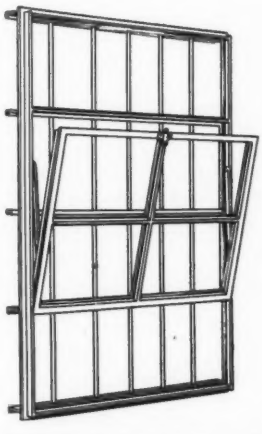
Sizes and prices upon request



PIVOTED WINDOWS

Mesker Pivoted Windows are ideal for factories, foundries, warehouses, garages, hangers and all industrial and commercial construction where a sturdy, general purpose window is needed. Vents are supported on the famous Mesker Cup Pivot which insures permanent weathertightness and ease of operation. Sections are 1½" and 1⅝" deep.

Sizes and prices upon request



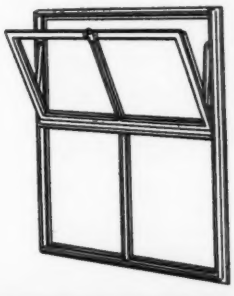
SECURITY WINDOWS

Security Windows are used extensively for side and rear walls on the first floor of stores and warehouses to prevent merchandise theft through the windows. Guard bars are built integral, spaced 6-inches apart. Windows are easily screened. All joints are solidly welded. Vents swing in, giving maximum protection even when partly open.

Sizes and prices upon request

STEEL DOORS

Stiles, rails, frames and panels of these doors are made of 14-gauge steel. They are used in industrial buildings, garages, apartments and wherever a heavy duty, fire-resistant door is required. Sizes and prices upon request.

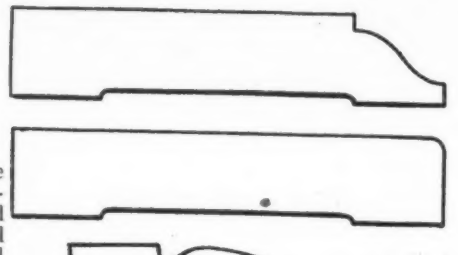


UTILITY WINDOWS

Mesker Steel Utility Windows are designed for all-purpose use in small garages, barns, milk houses, farm buildings and the like. Ventilator swings in giving deflected ventilation. Screen is fastened on the outside. Available in one size only, 3' 6⅝" high by 2' 8⅜" wide.

MESKER BROTHERS METAL WINDOWS • SALES DIVISION 4344 GERALDINE, ST. LOUIS, MO.

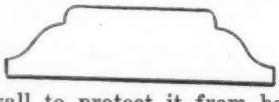
CASED OPENING—An opening without doors, finished with jambs and trim.

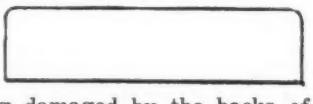


CASING—Wide moulding of various widths and thicknesses used to trim door and window openings

Casement Frames and Sash: Frames of wood or metal enclosing part or all of the sash, which may be opened by means of hinges affixed to the vertical edges.

CHAIR RAIL—A horizontal wood moulding on an interior





wall to protect it from being damaged by the backs of chairs. See House Cross Section.

CHECK RAILS—Meeting rails sufficiently thicker than a window to fill the opening between the top and bottom sash made by the parting stop in the frame. They are usually beveled. See Window Unit.

CHECK STOP—A moulding used to hold the bottom sash of a double-hung window in place in a window frame.

Cold Frame—(Hot Bed Sash): A large sash specially built for hot beds.

COLUMN—Any supporting pillar of wood, steel, masonry or other material. See House Cross Section.

COMBINATION WINDOWS—Windows designed for use in the same manner as combination doors.

CHECK RAIL WINDOW FRAME—(Brick veneer construction)—A window frame adapted to brick veneer construction, in which a check rail window may be installed and used. The essential parts of a brick veneer frame are the same as for frame building construction except that the outside casing is replaced by a brick moulding (staff bead) and a blind stop should be used which is wide enough to provide nailing space on the adjacent stud. Brick veneer frames are set at the time the wooden framework is built and the brick veneer is laid up later. When the brick mason lays the brick around the frame, mortar is slushed in between the brick and the blind stop. The brick moulding can be applied to the frame before setting if desired. but it is advisable to apply it after the brick are laid.

The above refers wholly and completely to the old conventional type of weight box frame that came into use with the check rail window. Frames for brick veneer construction differ so slightly from those for frame construction that the remarks in the paragraph immediately following with reference to changes in this feature of the frame may be applied to the brick veneer frame as well. The need for effective insulation for brick veneer buildings is no less than in other types and the setting of the frame in close contact with the studding to eliminate heat loss is an important feature.

Manufacturers of the new type frame usually model the frame building type so that the changing of the outside casing for a brick moulding adapts the frame for use in a brick veneer wall.

CLOVERLEAF PATTERN—A pattern of small moulding that consists of three beads with the middle one slightly raised above the others. The most common example of this pattern is a design of screen moulding as is shown in American Lumber Standards as numbers 7103, 7104 and 7105. The same pattern is used in some parts of the country as batens and astragal faces are often of the same design.

COLONIAL—A name given to a number of articles of stock manufacture which are supposed to be reproductions of the designs used for the same articles during the Colonial period of American architecture. There are Colonial doors, Colonial columns, Colonial mantels, Colonial siding and a host of Colonial other things that may or may not display some resemblance to similar articles of the time of Washington and Jefferson.

COMBINATION DOOR—A door which can be easily changed from a screen door to a storm door by removing the large screen panel and replacing it with a panel of glass. The screen panel has been standardized so far as design is concerned and practically all manufacturers seem to be agreed on this one feature. All combination doors are made from ½ inch to one inch over-size in width to permit them to occupy the space between the side casings, or brick mouldings, of a regular door frame, and one inch over-size in height to allow for variation as to use of threshold or slope of sill.

CROSS PANEL DOOR—A door in which all the panels have their longest dimension parallel to the rails of the door is called "cross panel door."

CROWN MOULDING—A moulding used on the face or outer edge of the cornice. It is made for stock in several patterns and in sizes from ¾ by 3 inches to ¾ by 5, inches. Crown moulding is usually of the "sprung" moulding type. Its use is to make an ornamental angle filler underneath the projection of the shingles where they project over the verge board. There is, however, a flat crown moulding that is perfectly flat on one side and has a long o-gee for one-third or more of the space on the other side. One edge is square and the other is the conclusion of the taper of the o-gee. The flat side of the moulding is nailed flat against the verge board directly underneath the projection of the shingles. Flat crown moulding is not a standard stock moulding.

CUTTING BILL—A list of cuttings with sizes given in accurate measurements, to be used for a specified purpose. The making out of a cutting bill of lumber pieces to be used in the manufacture of any proposed piece of millwork is one of the important features of "Billing into the mill," and the mechanical operation of getting out a cutting bill economically is probably one of the most important jobs in any mill. It requires knowledge and skill that can only be acquired by many years of experience.

DETAIL—As used by architects and builders, detail refers to the smaller parts into which a composition may be divided. It is applied generally to mouldings and other enrichments, to drawings showing the construction and manner of assembling the various parts.

DOWEL—A dowel is a short round pin which makes a joint between two pieces of wood by being inserted into adjacent holes in each piece. Glue is usually used for holding but sometimes a small cross pin is inserted through the dowel.

DOOR, BATTEN—A door made of sheathing secured by strips of board put crosswise.

DOOR FRAME, EXTERIOR—The frame in which a door swings in the outside wall a building.

Door Jamb Interior: The surrounding case into which and out of which a door closes and opens. It consists of two upright pieces, called jambs, and a head, fitted together and rabbeted. See Jamb.

right window for every purpose

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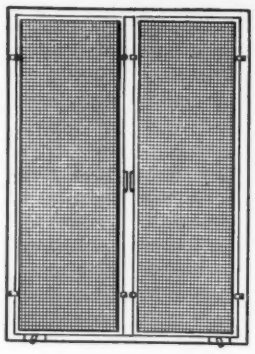
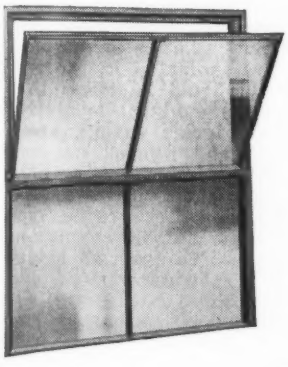
STRONG ALL-METAL SCREENS

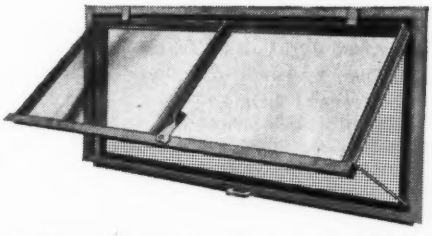
Attached to Residence Windows from inside. Windows operated without touching screen. Interchangeable in same size windows. Bonderized for rust protection. See Fenestra Residence Casement Catalog.





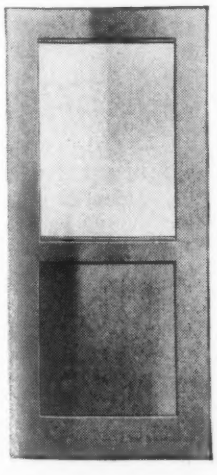
RUGGED UTILITY WINDOW

For garages, shops, farm buildings, areaways. Upper section opens in. With or without side guards. 2′ 8⅞″ wide x 3′ 6⅝″ high. See Fenestra Stock Products Catalog.



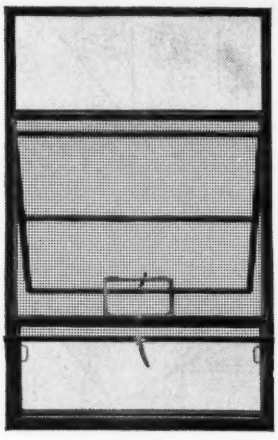
NEW BASEMENT WINDOW

Provides more daylight. Operates easily. A built-in stay holds it open. Verminproof. Easily screened. Three sizes: 2 lts. 15″ x 12″, 2 lts. 15″ x 16″, 2 lts. 15″ x 20″. See Fenestra Residence Casement Catalog.



STANDARD STOCK METAL DOORS

Swing doors (single and double) complete with frames and hardware. Swing right or left. Stock a few insulated metal panels, muntins . . . quickly have the type door your customer wants. Available with Underwriters' B Label. Slide doors also complete with hardware. See Fenestra Stock Products Catalog.

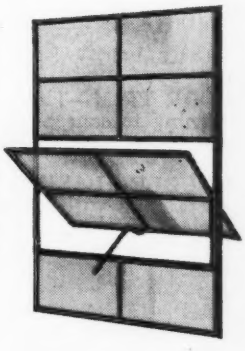


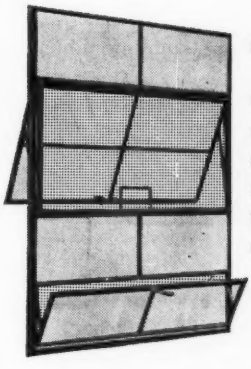
FENCRAFT INTERMEDIATE PROJECTED

Ideal for schools, hospitals, commercial buildings. Open-out vent forms canopy over opening. Open-in vent deflects drafts, sheds water outside. 20 stock types. See Fenestra Fencraft Intermediate Window Catalog.

PIVOTED WINDOWS

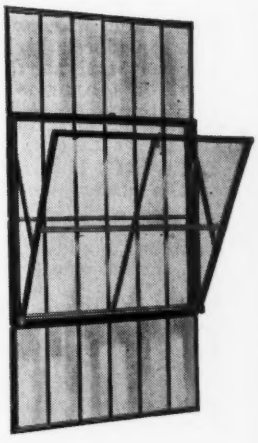
For industrial and commercial buildings. Strong, solid steel sections. Weather-tightness assured by double contact all around vents. 20 stock types. See Fenestra Industrial Window Catalog.





COMMERCIAL PROJECTED WINDOWS

Open-out vent forms canopy over opening. Open-in vent deflects drafts, allows all-weather ventilation. Easily screened. Low maintenance. 20 stock types. See Fenestra Industrial Window Catalog.



SECURITY WINDOWS

Combines a sturdy steel window and grille, with ventilator superimposed on the inside. Ideal for plant or store protection. For first-floor walls, and windows bordering fire escapes or near-by buildings. Seven stock types. See Fenestra Industrial Window Catalog.

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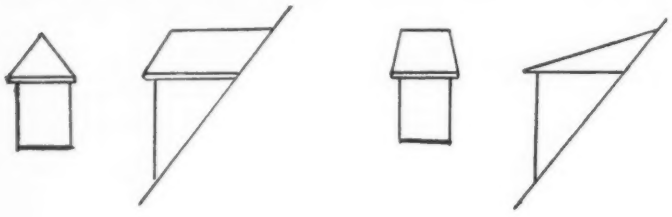
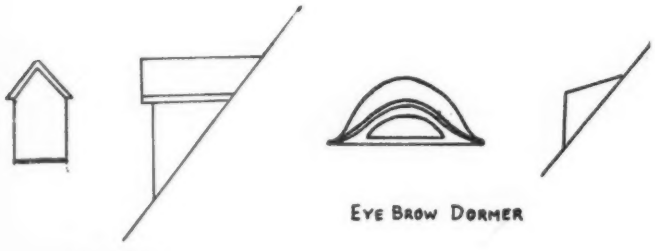
DOOR STOP—A moulding planted on the face of door jambs to stop the door.

DORMER—An internal recess, the framing of which projects from a sloping roof.



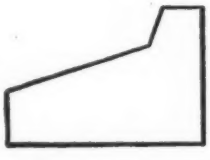


DOOR TRIM—The casing placed around an interior door opening to conceal the break between the plaster or other wall covering and the door frame or jamb. See Casing.

DOUBLE-GLAZING—Windows or doors with a double glass pane with an air space between them, hermetically sealed, to provide insulation, generally built into the sash. The term is used occasionally in referring to storm sash.

DRIP—(a) A member of a cornice or other horizontal exterior finish course which has a projection beyond the other parts for throwing off water. (b) A groove in the outer side of a sill to cause water to drop off on the outer edge, instead of drawing back and running down the face of the building.

DRIP CAP—A moulding placed on the exterior topside of a door or window to cause water to drip on the outside of the frame.



EGG AND DART—A moulding consisting of continuous series of ovals cut in relief with a small transverse arris separating each from the next. It is of ancient Greek origin and was, of course, originally hand carved and was considered highly ornamental in effect. It is now, however, and has been for many years, a favorite pattern for the pressed moulding manufacturers who produce it in several sizes from one-half inch to two inches or even more in width.

ELECTRIC MOULDING—A moulding run with a groove on the under side to cover electric wire or cable.

FILLET—A small, flat face or band used principally between mouldings to separate them from each other. Also called "neck moulding."

FIRE DOOR—A door construction, consisting of door, frame, hardware, and sill, which under standard fire test conditions meet the requirements for the location in which it is to be used.

FIRE DOOR, HEAT-ACTUATED—Designed to close automatically under the action of heat or smoke.

FIRE DOOR, SELF-CLOSING—Normally closed at all times and designed to close automatically upon being opened.

FLIGHT—(Of stairs)—A series of connected steps leading from floor to floor of a building. The "flight" is the complete assembly and may consist of two or more "runs" and include all rail, baluster, brackets, etc., according to plans. Any connected balustrate on the level around the well hole should be included. In making a take-off of stairwork for millwork, estimate only the items which are regarded as finish. Neither the rough horses (or jacks) which are the unexposed supports, nor the flooring on the landings should be considered. Such items are always figured in with the regular lumber yard stock.

FLUSH DOOR—"Flush" is the name given to that type of door which has an absolutely plane surface from edge to edge. They are often ornamented by the cutting of grooves and by the planting on of small mouldings, but the name sticks because the basic flush door is of a construction different from other types and the variation in design is not enough to effect its indiviluality. The door was originally designed for use in hospitals because the plane flat surface contributed to the hygenic idea, but architects and builders seemed to fancy it so that it is now found in practically every type of building.

FRAME—A frame is a group of lumber pieces so shaped and assembled as to form an enclosure and a support for a door, window or sash. The essential parts of the group are the jambs (head and side) and the sill.

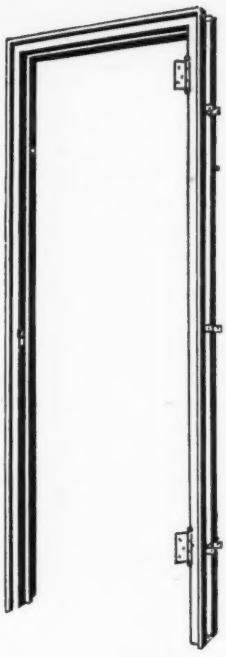
The word "frame" is applied to both exterior and interior openings although the term "jamb" is more frequently given to the interior unit. Exterior frames differ somewhat in construction with reference to their use in frame buildings, brick veneer buildings or masonry buildings and these differences are indicated in the reference applying to each type. It should be noted that while the exterior casing (or brick moulding) is always figured as part of the frame, the inside casing, stool, apron, etc., are regarded as trim and figured as such in millwork estimates. It is highly important to note also that the consideration of frames should always be in connection with the articles which they are to support. This is perhaps not so important in connection with doors as in windows, for door sizes are well established, but there is much variation in window sizes, and rules for figuring opening (or frame) sizes are not well enough established and recognized to eliminate the possibility of misunderstanding. Types of frames:

Basement ash frame
Borrowed light sash frame
Box frame
Brick veneer frame
Casement sash frame
Casement sash frame (frame building construction)
Casement sash frame (brick veneer construction)
Casement sash frame (masonry construction)
Check rail window frame
Outside door frame (frame building construction)
Check rail window frame (brick veneer construction)
Check rail window frame (masonry construction)
Church window frame
Circle head frame
Circle outside square inside
Door frame
Double hung window frame
Plank frame
Front entrance frame
Gable sash frame
Gothic frame
Outside door frame
Knock down (K. D.) frame
Louvre frame
Masonry frame
Outside door frame
Outside door frame (frame building construction)
Outside door frame (brick veneer construction)
Outside door frame (masonry construction)
Peak head frame
Plain rail window frame
Plank frame
Segment head frame
Slip head frame
Stud frame
Transom frame

FRENCH DOOR—A glazed door without panels and having the glass opening divided into numerous small lights. The above definition follows the prevalent idea and there

AETNA DOOR FRAMES

ONE-PIECE ALL-WELDED STEEL CONSTRUCTION
AN IDEAL STANDARDIZED ITEM FOR DEALER STOCKS
FASTER TURN-OVER FOR YOU . . .
IMPROVED SERVICE FOR YOUR CUSTOMERS



The increasing rate of repeat orders for Aetna Frames from dealers throughout the country, testifies to the fact that these field tested steel frames are meeting every requirement for the small homes market.

BRASS STRIKE PLATE WITH DUST BOX ATTACHED!

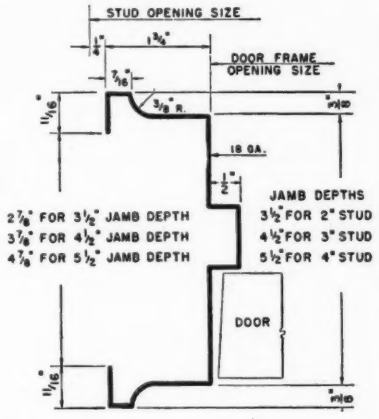
HINGES ARE WELDED TO FRAMES!

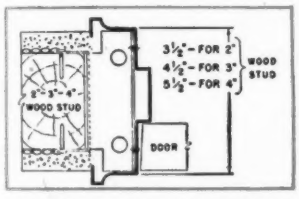
PRIME COATED AT FACTORY!

INSTALLED IN LESS TIME AND AT LOWER COST THAN MULTIPLE UNIT FRAMES!

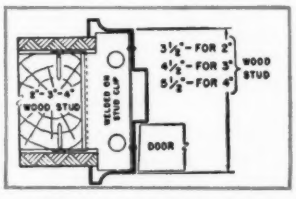
MORE PERMANENT AND MORE WEAR RESISTANT!

★ *LESS HANDLING AT BUILDING SITE*
★ *MASS PRODUCTION ECONOMY*
★ *SUPPLY PROBLEMS SIMPLIFIED*

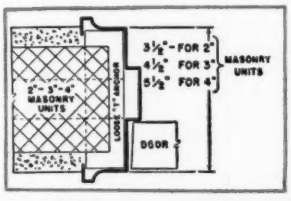




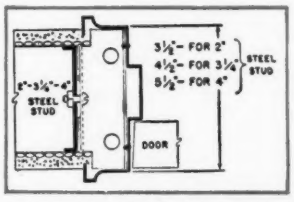
IN WOOD STUD PARTITIONS WITH PLASTER FINISH



IN WOOD STUD PARTITIONS WITH DRY WALL FINISH



IN MASONRY PARTITIONS



IN STEEL STUD PARTITIONS

STEEL: 18 gauge cold rolled steel.

FINISH: One Coat baked-on primer on all sides.

ASSEMBLY: All frames furnished in complete welded assembly with reinforcing plates behind each mitre joint—no additional labor required at job site. Hinge butts welded on and strike applied at factory.

Removable spreaders are fastened at the lower ends of the jambs. These spreaders protect the frames during shipping and handling and facilitate proper alignment during erection. They are easily removed after the frames are set.

HARDWARE: For 1⅜" doors (FR-1), one pair 3½" x 3½" butt hinges and loose pins are furnished. The three-knuckle portion of the hinge is welded to the frame. For 1¾" doors (FR-2), one and one-half pair 4" x 4" butt hinges and loose pins.

Frames for Double Acting doors are reinforced for pivot hardware. We do not supply this hardware.

A universal type brass strike, complete with steel dust box is attached to the frame. This strike is designed to fit most standardized locks and latches. Where a bit key lock is used requiring a two-hole strike, the Aetna universal strike is provided with a lower knock-out plate that is easily removed. Patent Pending on strike plate and dust box assembly.

ANCHORS: Three anchor clips are welded to each jamb. T-anchors are furnished for installation in masonry walls. Each jamb section is provided with a floor knee for fastening to the floor.

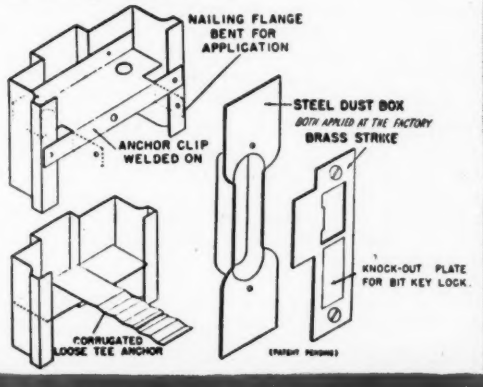
STANDARD DOOR FRAME OPENING SIZES

WIDTH		HEIGHT	
1'- 2"	6'-6 5/16"	6'-8 5/16"	
1'- 6"	"	"	
1'- 8"	"	"	
1'-10"	"	"	
2'- 0"	"	"	
2'- 4"	"	"	
2'- 6"	"	"	7'-0 5/16"
2'- 8"	"	"	"
2'-10"	"	"	"
3'- 0"	"	"	"

STEEL PRODUCTS CORPORATION

Trimmed openings furnished up to 4'-0" wide.

WRITE OR WIRE TODAY FOR DETAILED INFORMATION


NAILING FLANGE BENT FOR APPLICATION
STEEL DUST BOX
BOTH APPLIED AT THE FACTORY
BRASS STRIKE
ANCHOR CLIP WELDED ON
KNOCK-OUT PLATE FOR BIT KEY LOCK.
CORRUGATED LOOSE TEE ANCHOR

AETNA STEEL PRODUCTS CORPORATION

Manufacturers of Quality Hollow Metal Doors and Frames for fifty years.

Executive Offices: 61 Broadway, New York 6, N. Y.

is no reason why it should not be accepted as correct. Originally, however, the term "French door" was applied to a door without wood panels and with unusually narrow stiles and rails. The number of lights did not effect the name.

GLASS STOP—Moulding used to fasten glass in doors or window sash.

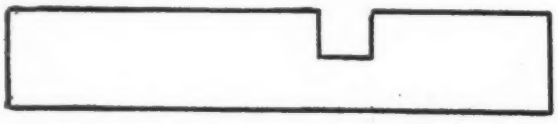
GOOSENECK—A peculiarly shaped piece of stair rail which curves upward from the ramp to the vertical and then takes a right angle to the horizontal, to bring the course of the rail to the proper point on the landing newel.

HALF ROUND—A moulding whose cross section would show a half circle.

HOOK STRIP—A horizontal band of interior wood finish to which metal clothes hooks are attached, usually in clothes closets.

JALOUSIE—A blind or shutter with fixed slats sloping upward from without to admit air and light but to exclude rain and sun.

JAMB—The side post or lining of a doorway, window or other opening.

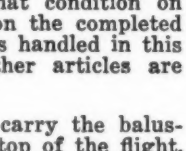


JAMBS—That part of any frame, either window or door, which surrounds and contacts the thing which the frame is intended to support. There are always two side jambs and a head jamb in every frame (except in Gothic frames, where no head jamb is indicated, and in Peak head frames, where there are two), and all stops are fastened to the jambs. In old style check rail window frames the pockets and pulleys are located in the side jambs but some of the more modern manufacturers are using patented spring balances which are placed upon the upper side of the head jamb and this, of course, eliminates both pockets and pulleys. There are one or two types of spring balances that are intended for installation at approximately the position of the conventional pulley and holes are cut for them just as pulley holes have been cut in the old style frame, but this requires either that the stud be set back far enough to receive them or that gouges be made in the studding.

KNOCK DOWN—Any article of millwork which is manufactured to the extent of the completion of all machine work and delivered to the customer in that condition without being put together or nailed up. Stock outside window and door frames are invariably brought to the lumber dealers warehouse in that condition on account of the excessive freight rates on the completed article. Sash and windows are sometimes handled in this way and a considerable number of other articles are furnished either K. D. or semi-K. D.

LANDING NEWEL—A newel used to carry the balustrade of a stair at a landing or at the top of the flight. In fact, any angle in the face string would, in correct construction, call for a landing newel, or angle newel, as they are very often and quite correctly called.

LANDING TREAD—A strip of the same kind of wood and of the same thickness as stair treads, about 4 inches. wide, rabbited on one side to the thickness of the finish floor and nosed on the face edge the same as the tread. Used as a finished edge on stair platforms and around stair wells.



LIGHT—Space in a window sash for a single pane of glass. Also a pane of glass. See Window Unit.

MITER JOINT—A joint, usually endwood to endwood, at an equally divided angle. Miter joints are not usually satisfactory and cabinet makers avoid them unless the members are well supported against warping. It is easy to fit and is held in place by stiles and rails. Raised moulding is quite another matter, for the finisher must not only make a perfect miter but he must also fit the moulding tightly against the stiles and rails to guard against warping and failure of the joint. Either operation is easy but together they make the otherwise unexplained difference in cost between flush moulding and raised moulding.

MOULDING—Material, usually patterned strips, used to provide ornamental variation of outline or contour, whether projections or cavities, such as cornices, bases, door and window jambs and hearts, etc.

MULLION—The Standard Sash and Door list defines this term as follows: "An upright or vertical bar, usually wider than the ordinary bar, dividing the glass in a sash, or a wide upright bar dividing two sashes in a frame. Applies also to upright bars in doors." There seems to be a decided tendency in most parts of the country to use the word "mullion" more in connection with frames than with sash. This is as it should be, for while there is no doubt as to the correct meaning when applied to frames, there has always been some question regarding its use in connection with sash. There is some confusion also in the use of the term when applied to doors. "A vertical division in any frame between two windows, sash or doors," is a true definition as far as it goes and the opinion of this book is that it goes far enough.

MULLION CASINGS—The vertical casing that covers the mullion (both inside and outside) of a multiple window, sash or door frame. The inside mullion casing should be of the same species of wood as the balance of the finish of the room in which it is located, and be figured, in estimating, as a member of the side of trim of which it is a part. The outside mullion casing should, of course, be of the same wood as the other outside casing on the same job. The width of both mullions depends upon the kind of frame used. The standard weight box frame usually used mullions 5¼ inches wide, but the more modern types of narrowline frames use them somewhat narrower.

MULLION FRAME—Any frame which contains two or more window or sash openings in the same unit. A unit with two windows (or sash) is called a "twin," with three windows it is called a "triplet," with four it is called a "quadruplet" (for quad), etc. The same term would apply to doors also but instances where two or more doors are included in one unit are so few that the term is seldom used in that connection.

MUNTIN BAR—The Standard list of the National Door Manufacturers' Association, Inc., defines this term as "Any short or light bar—either vertical or horizontal—in a sash or door between glass or panels and not extending the full width or length of the article."

NEWEL (Interior stair)—Stair newels are almost invariably made of hardwood and are of both the boxed and the "turned out of solid" type. According to use there are two types—the starting newel and the landing, or angle, newel.

NOSING—As usually applied, this term is used to designate the rounded edge of a stair tread which projects forward of the riser. The term is also applied to the narrow strip (sometimes called "Landing tread") which is made to match the tread at the edge of a landing and around the well hole. In this use it is laid flush with the flooring and makes a covering for the endwood of the pieces of flooring that are laid at an angle with the edge of the well hole.

ODD—With reference to millwork, this term is applied to any size, pattern or design of doors, windows, sash, frames, or other millwork that is not shown in the stock lists of wholesale millwork warehouses.

OPENING SIZES—The "Opening size" of a window or sash is the total size of the glass, in width and height, plus whatever allowance is made for the wood that is used for stiles, rails, mullions and muntin bars. In other words, the opening size of a window or sash is the finished size as it sets in place in the frame.

PANEL DOOR—Refers to doors having stile and rail construction with the space between the stiles and rails filled with wood panels. The joints where the rails join the stiles is usually doweled but it is not at all unusual for small mills to use mortise and tenon joints. Panel doors and sash doors use the same construction so far as the frame is concerned and panel doors may be either solid or veneered. There is no standard layout for any

GATE CITY Type "E" HARDWARE

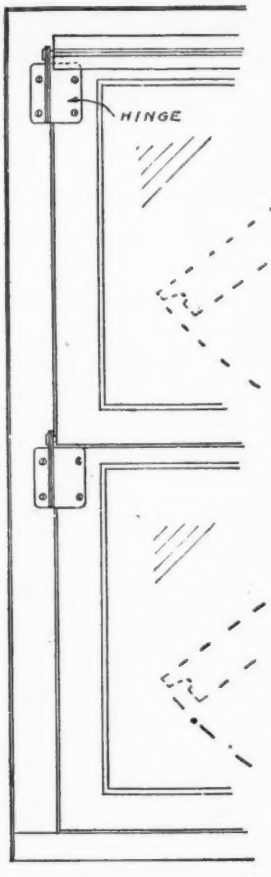
HOW GATE CITY AWNING WINDOWS ASSURE YOU A BETTER PROFIT

COMPETITIVELY PRICED! Attractive carload discount.

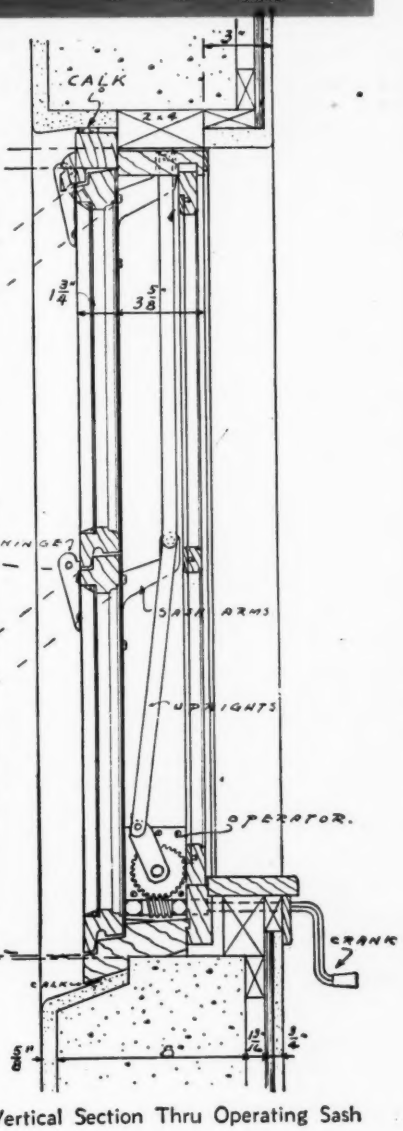
MINIMUM HANDLING! Each unit furnished with frames already set up—sash, glazing and hardware installed—wood stool and apron included—screens semi-prefit and wired with Lumite. One delivery to the job. No extras.

NO STOCK WORRIES! One size (3-36-18) answers 75% of average requirements. No slow movers. Quick turnover proved by sales records wherever introduced.

HERE'S THE WAY IT OPERATES ↑ Note the small inconspicuous handle. Turning this handle gives vernier-like control by means of the worm and gear mechanism. All sash in the tier open and close simultaneously . . . effortlessly. Nothing to get out of order.



Elevation of Hinges



Vertical Section Thru Operating Sash

HARDWARE SPECIFICATIONS for Gate City Type "E" Awning Windows

vents shall be hinged at the top to swing out. All vents shall have combination ge and sash arms installed on the inside at the top of each vent.

vents shall be connected to each other vertically from top to bottom by means exposed links attached to the sash arms on both sides of the jamb.

links shall be attached to the lifting arms of the operator located at the sill each side of the opening.

operator shall consist of an exposed worm and gear mounted on either jamb ht hand mounting is standard, see detail); with a horizontal shaft attached, nding the width of the opening and seated in a loose bracket on the jamb osite the worm and gear and having two lifting arms attached as follows: at the end of the shaft, the other on the shaft next to the worm and gear.

The crank has a hexagon shaft that fits into a hexagon socket in the wor.a and is held in place with set screws through the worm socket.

The combination hinge and sash arms are made of aluminum with stainless steel pins with a washer separating the leaves.

The vertical links are aluminum with coated steel pins.

The pins are grooved to receive spring clips for attaching the link pins to the sash and to the lifting arms on the operator shaft.

The operator shaft, worm and gear, brackets and lifting arms are steel, galvanized or coated for rust protection.

The crank and escutcheon are brass, nickel plated.

All hardware shall be exposed for accessibility.

ATHERSTRIPPING—Detailed suggestions for horizontal weatherstripping will be furnished on request.

Gate City

GATE CITY SASH & DOOR COMPANY, DEP'T L, FORT LAUDERDALE, FLORIDA

Member of The Producers Council, Inc.

Export Sales Representative: FRAZAR & COMPANY, 50 CHURCH ST., NEW YORK 7, N. Y., U. S. A. Cable Address: Frazar, N. Y.
Agents in principal cities throughout the world.

of the stock paneled door types. While the appearance of each type is approximately the same in all factories, the width of the face of stiles and rails may vary somewhat. The Standard Sash and Door list of the National Door Manufacturers' Association gives the following: "to apply to all doors not otherwise provided for regardless of the arrangement of panels or grade."

PIECE CORE—The core of veneered doors is almost always built up of short pieces. This is what is called piece core construction. It has advantages over every other kind, at least so far as is known at present. See "Core."

PLAIN RAIL WINDOW—Plain rail windows consist of two sash so arranged in the frame as to slide vertically, each past the other. Stock plain rail windows are always 1⅛ inches thick and the frame channel in which they slide is made just wide enough to accommodate the thickness of two sash without any allowance for check stop as is the case with check rail windows. In other words, both top and bottom sash slide in the same channel. The top rail of the lower sash and the bottom rail of the top sash are perfectly plain and the same thickness as the stiles. When the upper sash is clear up and the lower sash is clear down these meeting rails are supposed to conform to each other to close the opening. The construction is not good, however, and the tendency of both sash to get out of line is great and where weather conditions are severe the sash are too loose to be efficient in keeping out the cold. There are two kinds of plain rail windows—"Eight Light" and "Twelve Light."

POCKETS—Any check rail window frame in which weights are used to balance the sash must include provision for a space just back of the jambs to permit the up and down movement of the weights. A small closable opening must also be provided in the jamb to permit access to the weights after the installation of the inside casings. This space together with the opening in the jamb is called "pocket."

QUARTER ROUND—A moulding whose cross section would be one-quarter of a circle. A very necessary item of stock in all lumber yards. In softwood the sizes carried are 1.2 inch by ½ inch, ⅝ inch by ⅝ inch, ¾ inch by ¾ inch and 1 1/16 inches by 1 1/16 inches, although the second and last sizes are frequently omitted. Wholesale warehouses stock all sizes in soft wood and all except the last in southern yellow pine. The ¾ inch size is a warehouse item in oak and usually in birch and gum.

RAIL—The cross or horizontal members of the framework of a sash, door, blind or any paneled assembly.

RAISED PANEL—Panels that increase rather abruptly in thickness at a point from one to two inches from the enclosing frame. The point of increase is parallel to the edge of the frame and equi-distant on all four edges. The thickness varies according to the fancy of the specifying architect or, in stock panel doors with the practice of the manufacturer. The edge of the panel must, of course, be thin enough to enter the plowed groove in the edge of the stile. This groove is from 5/16 inch to ⅜ inch.

RETURN—The continuation of any moulding or any piece of finish in a different direction which is usually at right angles. A stair tread is said to be returned when it is made with a miter cut at the end of the nosing on the front edge and a piece planted on the end to represent a continuation of the nosed edge across the end. In this way the end wood is covered and a much neater job is possible. The crown or bed moulding under the face projection of the drip cap of a "crown mould cap" frame is always mitered and "returned" against the siding. The usual purpose of a return of this kind is to obviate the necessity of end wood exposure.

RETURN BEAD—A moulding with two flat surfaces at right angles with each other and a projecting bead, nearly full round and of a diameter of approximately one inch. This moulding was formerly used for finishing between the corner boards on the corners of houses, but has been used but little during the last ten or twelve years. It is a standard moulding, however, is carried in stock by most of the wholesale millwork warehouses and by some lumber yards. It is No. 7071 of the Simplified Practice Recommendations.

SASH—A frame of wood, or possibly of other material, into which a pane, or panes, of glass may be set, for use in the walls of a building to provide for the entrance of sunlight, and to act at the same time as a barrier to the escape of heat and to the entrance of such other forces as would interfere with the comfort and safety of the occupants. This wood frame is made of sash stock and by the use of bars may be divided into any number of lights which are usually rectangular in shape, but which, by the use of curved bars, may be shaped to suit the fancy of the user. In sash construction the glass is held in place by means of flat tacks called glazier points and the glass bed is then filled with putty which is pressed in tightly around and over the edge of the glass, making the glass installation weather tight. A sash without glass is called an "open sash" and after glass is inserted it is called a "glazed sash."

SASH BALANCE—Any sash that slides up and down usually requires some kind of balance. The old style plain rail window was held open by means of a prop or sash bolt, but the more modern window must be balanced, either by weights or by mechanical means. There are three leading types of mechanical sash balances: tape or drum type, flat type and spiral type.

SASH CHAIN—Chain used in place of sash cord. It is durable, strong, and does not kink or twist. Comes in several sizes and finishes. The smallest size is strong enough for any window in the ordinary home.

SASH CORD—Cord or rope made especially for the balancing of weights with the sash in check rail windows. Since it operates over pulleys in the frame and the weights sometimes rub against the sides of the weight box, sash cord must always be braided. Sash cord can be had in sizes that vary from 3/16 inch and ⅜ inch of various weights according to the following table—

No.	Size Inches	Approximate Length Per Pound	Suitable for Weights of
6	3/16	66 feet	Less than 5 pounds
7	7/32	55 feet	5 to 15 pounds
8	1/4	44 feet	15 to 25 pounds
9	9/32	36 feet	25 to 35 pounds
10	5/16	27 feet	35 to 45 pounds
12	3/8	20 feet	Heavier than 45 pounds

SASH STOCK—This term indicates the various items of linear stock that are used for cutting into lengths suitable for the stiles, rails, bars and muntins of windows and sash. The stile and rail lengths are manufactured in three thicknesses—1⅛, 1⅜ and 1¾ inches.

SCREWED AND GLUED—A door or other piece of flat wood work made of two or more piles which are glued together flatwise and screws put in for additional security.

SCRIBING—Fitting woodwork to an irregular surface.

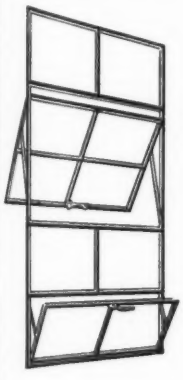
SHOE RAIL—A strip of lumber of no set size but frequently approximating the size of a two by four, which is grooved on the top to receive the balusters of a balustrade. The bottom rail of a porch balustrade is usually made in this way. A curb string stair uses a grooved shoe for the top member of the box which forms the curb string.

SIDE OF TRIM—A side of trim consists of all the finish required to trim an opening in a wall, such as a window or sash or one side of a door opening. When two or more windows are built into one frame the trim is designated in the same way as the frame, that is—1 side twin window trim, 1 side triple window trim, etc. Whether the opening is a window or sash should always be indicated so that there may be no confusion as to size. If the opening is a sash the description should be 1 side sash trim, 1 side triple sash trim, etc. The size may be given in terms descriptive of the window such as—1 side window trim 24x24 2 light check, or it may be given for the opening as—1 side window trim opening 2 feet 4 inches by 4 feet 6 inches. If the opening is a door the size of the door will indicate the side of trim. The description of the trim itself should include reference to a detail of all the members, including the stops, if for window or sash, but omitting stops if for a door. In figuring door trim, since only one set of stops is necessary where two sides of trim are usually used, it is customary to include them with the jambs. The

LUPTON WINDOWS FOR EVERY BUILDING NEED

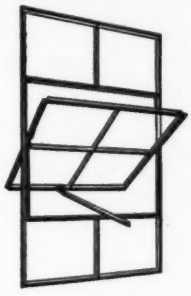
Manufactured in standard sizes and types recommended by Metal Window Institute.

ARCHITECTURAL PROJECTED WINDOWS . . . Used in school, office and commercial buildings to provide controlled, natural ventilation, abundant daylight and modern appearance at comparatively low initial cost, with minimum expenditure for repairs. Ventilators operate with Lupton projected movement. Designed for outside putty glazing. Easily screened.



COMMERCIAL PROJECTED WINDOWS . . . Recommended for commercial and industrial buildings especially where screens are required. Ventilators operate with Lupton projected movement. Remain open at any position without stay bar. Designed for inside putty glazing. Easily screened.

PROJECTED WINDOWS . . . for glass block walls (not illustrated).



PIVOTED WINDOWS . . . Used for industrial buildings, sometimes for commercial buildings where low cost is essential. Provide more daylighting and ventilation than any other type window of comparable cost. Ventilators are pivoted 2" above center. Top opens in, bottom opens out. Double contact is provided all around ventilator.

SECURITY WINDOWS . . . Combine the advantages of a neat appearing, ventilating, steel window with security against entrance. Recommended for use in warehouses, stores and all openings near ground level where, ordinarily, grilles are required. Ventilator opens inward with Lupton projected movement and will remain at any degree of opening desired.

BASEMENT WINDOWS AND UTILITY WINDOWS . . . Slender steel frames provide maximum glass area for size of opening. Ventilators open in at top to about 45 degrees and are held in position without stay bar or restraining arm. A latch is furnished for fastening in the closed position.

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Buffalo 1: Globe Plaster Co. 154 West Huron St.
Glens Falls: G. C. Woodbury & Son Upper Glen St.
New York 54: Fireproof Products Co., Inc., 138 Bruckner Boulevard
Schenectady: Woodbury Lumber Corp. 1702 Chrisler Ave.
Syracuse: Syracuse Lumber Co. 319 North Clinton St. & 27 Lodi St.

NORTH CAROLINA:
Asheville: Dave Steel Co., Inc.
High Point: Salem Steel Co.
Winston-Salem: Salem Steel Co. 1725 Vargrave St.

OHIO:
Cincinnati 2: Wm. S. Ibold & Co. 626 Broadway
Columbus 9: Allied Bldg. Specialties Co., 3773 E. Livingston St.

OKLAHOMA:
Oklahoma City: Lusco Brick & Stone Co., 400 N. Klein St.

OREGON:
Portland: Western Door & Plywood Corp., 900 S. W. Second Ave.

PENNSYLVANIA:
Bellefonte: M. L. Claster & Son
Harrisburg: C. H. Hershock, Inc. 1513 N. Cameron St.
Hughesville: Lundy Lumber Co.
Lancaster: Charles E. Johnson 312 N. Lime St.
Lock Haven: M. L. Claster & Son
Muncy: Lundy Lumber Co.
Philadelphia 40: Tomkins Brothers Rising Sun Ave. & Venango St.
Pittsburgh: Wholesale Distributing Co., 36th St. & A. V. R. R.
Pottsville: Economy Supply Corp.
Reading: Berks Bldg. Block Corp. 2210 N. 5th St.
Scranton: Anthracite Bridge Co. 300 Genet St.
State College: M. L. Claster & Son
Turbotville: Turbotville Block Co., Inc.
Tyrone: M. L. Claster & Son
Wilkes-Barre: William H. Pierce 402 Bennett Bldg.
Williamsport: Lundy Lumber Co. 1896 W. 4th St.
York: Atlas Manufacturing Co. Grantley Rd. & Penna. R.R.

TENNESSEE:
Memphis: Fant & Anderson Co. 822 Rozelle St.

TEXAS:
Dallas 1: Gene Paige Co. P. O. Box 2428, 2434 S. Harwood St.
El Paso: Electrical & Mechanical Supply Co., Inc., 708-716 N. Piedras St.
Houston 1: Gene Paige Co., P. O. Drawer 1430, 7620 Washington Ave.

UTAH:
Salt Lake City: Industrial Steel Co., Inc., 475 West 6th South St.

VIRGINIA:
Bristol: Central Warehouse Corp. 512 Scott St.
Richmond: W. H. Stovall & Co. 514 N. 11th St.
Roanoke: C. L. Fiedler Co., P. O. Box 2331, Norfolk Ave. & 8th St., SW

WISCONSIN:
Milwaukee 8: Thomae Glass Co. 5510 W. State St.

MICHAEL FLYNN MANUFACTURING CO.

704 East Godfrey Avenue, Philadelphia 24, Penna. : : New York 17: 51 East 42nd Street : : Washington 5, D. C.: Bond Building, 14th Street and New York Avenue : : Los Angeles 36: 116 South LaBrea Avenue.

LUPTON METAL WINDOWS

description of trim should always include the kind of wood to be used.

SOLID STICKING—Where the sticking of the door is run solid on the edge of the stiles and rails and not planted on as is the case with "flush moulded" doors. It happens that defective panels are sometimes taken out by cutting off the solid sticking on one side of the door. The replacement panel is then held in place by means of a moulding planted on in place of the solid sticking.

SPECIAL MILLWORK—Any item of woodwork or millwork manufacture that has features which distinguish it from items of stock manufacture should be termed "Special." Any items that cannot be put through the mill in stock quantities or that does not have enough demand to justify stock quantity production is also "special." Special millwork and "made to order" millwork are practically the same and include all millwork items that cannot be classed as "stock." It must be noted that items that are "special" in one mill need not necessarily be "special" in another and this depends largely upon capacity and equipment.

SPLIT—A split is a lengthwise separation of the wood, due to the tearing apart of the wood cells. There are three sizes or degrees: "Short split," "Medium split" and "Long split."

SPLIT COLUMN OR NEWEL—In the porch material of the early part of the century columns and newels were on important items. Half columns and often half newels were placed against the building to receive the rail of a porch or porch deck.

STAIR-WORK—All of the mill-work material which is used in the building and finishing of a flight of stairs. In estimating the stair jacks are not considered stair-work for the reason that they are not of hard-wood and are usually made by the carpenter on the job. The stair-work is smoothed, sanded and ready for the varnish finish.

STANDING FINISH—Same as "Standing trim."

STANDING TRIM—A term that is sometimes used to indicate the trim for windows and doors. Rather indefinite and confined to certain localities.

STARTING RISER—The first riser at the foot of the stair. In common construction the riser is straight and rests upon the floor below the starting tread. See "Circle and tread."

STILE AND RAIL DOOR—Any door in which the visible framework is made up of some combination of stiles and rails. The spaces between stiles and rails are either wood panels or glass.

STOCK MILLWORK—Woodwork which is carried in stock and ready for shipment. It should not be assumed that everything that is listed or illustrated in a millwork catalogue is stock. Illustrations are often used to assist in selection. Neither should it be assumed that everything that carries a list price is stock material and can be furnished at the regular discount. A different discount may apply to two closely related articles, one of which is too slow moving to justify manufacturing in stock quantities. Some wholesale warehouses issue a separate stock list and some make some other indication as to which is stock and which is non-stock.

STOCK QUANTITY — Wholesale millwork warehouses charge extra for "odd" or "special" windows and doors but will usually furnish the same items at regular prices if ordered in quantities which are indicated. These "stock quantities" vary with different warehouses and to some extent with different articles.

STOCK SHEET—A list of articles and sizes that are carried in stock.

STOCK SIZES—It is impossible for any millwork warehouse to carry all listed sizes of doors and windows in stock. "Stock sizes" are usually indicated for the convenience of the trade, either in the catalogue itself or on a specially issued "Stock sheet."

STOOL—The Stool is that horizontal member of a side of window or sash trim that extends from the bottom rail of a window or sash toward the inside of the wall and covers the inside edge of the sill of the frame. In a masonry wall it not only covers the inside edge of the sill of the frame but also the masonry course between the frame and the inside surface of the wall. The common household name for this member is "window sill." It provides a horizontal stop.

STORM DOOR—A door 1⅛ inches in thickness which is set into an exterior opening between the jambs and flush with the outside casing. They are made either all panel with no glass or they may be part panel with one or more lights in the upper part. They are useful in winter to provide a better barrier to cold air and drafts than is possible with a single door. They set in the same space as the screen door which they replace when the screen door is no longer necessary. Like the screen door they are made from ½ inch to one inch over size all around to allow for the set-back and shrinkage of the casing as well as for the use of a threshold.

STORM SASH—A single sash, full size of the frame, which is installed flush with the outside casing of the window frame of a frame building or flush with the brick moulding of the window frame of a masonry building. Since storm sash are for winter use and occupy the same place as full sized window screens, it is customary to make the installation when removing the screens in the fall and then replace them with the screens again in the spring.

THRESHOLD—A piece of wood about ⅝ inch by 3⅝ inches, usually of oak, beveled both edges, to be placed on the floor underneath the closed interior door, to close the space. A door must, of course, be fitted with floor clearance for swinging, and in the days before the use of heating plants that heated all rooms, some rooms were kept closed in winter, either for economy or because the old time stoves were unequal to the task. Of course the space below the closed door had to be filled and that required a threshold. In those days every door in the house was fitted with a threshold but in these later days only exterior doors require them.

WAINSCOT CAP—While almost any design of base cap could be used as a wainscot cap provided the rabbet was of the right size to match the thickness of the wainscot, there was one pattern which was popular and which is still carried in stock in some warehouses. Its size is ¾ inch by 2½ inches but being in the form of a sprung moulding it will still fit nicely over a ¾-inch wainscot.

WATER DRIP—A moulding which is grooved into the bottom rail of a sash and projecting away from it, to turn the water away from the bottom edge. It is carried in stock in wholesale warehouses in one size only—¾ inch by 1½ inches. It is of soft wood, usually ponderosa pine.

WEATHER STRIPS—Weather strips are usually strips of thin metal so fitted to the outside edges of a door or a window, or to the jambs of a door or window frame, that when the door or window is in a closed position the crack that is necessary for easy operation is completely closed. Strips of felt are sometimes used but the felt often interferes with the opening or closing of the door or window and lacks the permanency that is desirable. Practically all of the most recently built factory window frames use weather strips of one design or another.

WINDOW STOP—Window stops are strips of wood which are fastened to the jambs of a window frame to hold the window in place.

George F. Baker Edwin A. Breagle

MILLWORK DISTRIBUTORS COMPANY

General Offices & Warehouse:
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BALTIMORE 24, MARYLAND

IMMEDIATE SHIPMENT

Midico Window Units, White Pine, Weatherstripped. Set up @ $10.55 & up.

Combination Doors, Like N. D. 737 Layout, Bronze, Wire, 8 lights glazed @ $13.75 & up.

6 Rsd. Panel #1 Fir Doors 2-6 x 6-8, 1⅜" @ $9.39. Also other sizes.

SEND FOR LISTS

Section 4

Paint and Wallpaper

THE GROWING importance of the paint and brush business to the dealer is graphically illustrated in comparative total sales figures. During the best years before the war, total sales were approximately 400 million dollars. In 1948 they passed the billion dollar mark.

This volume should be maintained, even increased for some time to come. Such factors as the unprecedented amount of new construction, an ever widening scope of uses, new and improved products, and a growing consumer appreciation of paint products for home decoration will continue to create a high demand for paint and the allied materials used in connection with it.

In 1945, 76% of the lumber and building material dealers in the United States were selling paint. Although no accurate survey has been conducted since, this figure has undoubtedly increased as well it should, for paint products are a definite part of the complete line of products necessary to supply a finished structure whether new, remodeled or redecorated. The dealer who recognizes and takes advantage of this fact has an exceptional selling opportunity in 1949.

Many dealers have gone a step further in providing home decoration service by incorporating a wallpaper department in their stores. In some regions of the country 40% of the dealers have done so. In other areas the percentage is somewhat lower. There is a definite trend, however, for more and more dealers to assume the complete home decoration service as it dovetails with the "package sales" program that has proved so profitable in recent years.

AVAILABLE MARKETS

The Home Market

Over the years it has been common knowledge in the paint industry that of the total production of paint, enamel varnish, stains and other coatings about one-third has been purchased and applied by home owners and other amateur brush wielders, one-third by professional painters and one-third by manufacturers for factory finishing of furniture machinery, sewing machines and other merchandise. That makes the home market loom far more important than the impression given by sales of pints and quarts from your shelves would indicate.

Farm Market

The crying need for paint on the farm has been the theme of sales planning for years. More paint and enamel is used there than may be apparent by looking at a tenant farmer's buildings. There no longer is any difference in wants, styles, mode of life and education between farm and city families. Town homes are better painted than farm buildings but some paint dealers are going to sell the materials this year that will equalize this condition.

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Painting Contractors

The one-third of the production used by painters is a huge market hardly touched by many lumber dealers. These men buy five and ten gallon and barrel lots. Over the season, total gallonage is astonishing even when you are supplying only a few painters. You can get that business if you come to know the stock they want, post yourself on prices and the discount structures in the trade and apply your knowledge of handling the credits reasonably. These men not only use vast quantities of paint but their daily contacts in homes put them in a position to influence the paint buying habits of many people.

Consumer

Surveys by leading manufacturers reveal that a staggering amount of paint, allied equipment and supplies, etc., are purchased and applied by the consumer. During the year, every family in the country has several occasions to buy these products for a multitude of home uses, with the quantity varying all the way from a small can to several gallons.

The housewife is an excellent customer for paint, and in addition to being the individual who decides colors for home decoration, is also the individual who applies many thousands of gallons on kitchen, lawn, or playroom furniture.

Home Workshop

The home workshop is the fastest growing hobby in the nation today. These enthusiasts, amateur carpenters and tinkerers with arts and crafts, consume large quantities of paint, stain, varnishes, lacquers and waxes. In addition to these items, they are excellent customers for brushes, thinners, solvents and similar supplies of all kinds.

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EXTRA QUALITY
DESERVES A BETTER PRICE

A CHEMICAL INDUSTRY

The paint industry of today is essentially a chemical industry. Product improvement has kept pace with the expanding use of paint products and has opened the door to new uses and applications. Today, a typical manufacturer of paint, varnishes, lacquers, etc., carries an inventory of more than 500 different raw materials which are gathered from all over the world.

TYPES OF PAINT PRODUCTS

There are many types of paint products on the market today, all designed to do a particular job or series of jobs. There are paints for inside and outside wood coverage, cement paints, metallic paints, calcimine paints, water resistant paints, lacquers, varnishes, stains, and many others.

The most familiar, of course, are the oil base products that are a combination of a metallic pigment and linseed oil. The old established formula of white lead and linseed still forms the basis of many paint formulas, although in recent years other metallic carriers besides lead have been introduced with outstanding success.

Research and engineering have developed improvements in all paint products. Outside paints are more resistant to weather than ever before. They maintain their color longer and their protective qualities are greater. Inside paints have improved covering qualities, and "one-coat" products have been introduced that eliminate the necessity of multiple coverage.

Basically, all oil paints begin with white and are colored to desired shades by the thorough blending of oil pigments. These pigments are supplied in tubes in raw colors so that the consumer may now mix whatever shade he desires by adding them to white.

The difference between outside, inside, dull-finish, semi-gloss, and gloss finishes is largely a matter of formula, all falling into the broad classification of oil base products. Each is specially compounded to provide the desired finish and manufacturers do not recommend that different types be mixed for any application.

Lacquers are a comparatively new addition to the paint field, particularly for home use. These vary from oil base products in that the oil used is essentially a liquid plastic that dries and hardens quickly after application and usually with an extremely high gloss. The use of lacquers, therefore, is not as broad as oil base paints, but for its recommended applications it is indeed a most satisfactory addition to the paint field.

The oil resin paste products have proved quite popular, as have the special calcimine products. These are supplied in paste form and are reduced to the proper consistency for application by the addition of water. These products serve a wide variety of recommended uses from covering old wallpaper to providing a water resistant surface to both inside and outside masonry walls.

Stains and varnishes have as their primary uses the finish of furniture and woodwork, although a unique line of stains in revolutionary new shades has been developed especially for roofing and siding shingles. These new shades introduce pleasing tones of gray, blue, and green that enhance the appearance of shingle surfaces.

For metal surfaces, in addition to the oil base paints, aluminum and chromate products are available. These may be used either as a prime coat or as a protective covering to prevent corrosion. As a practical covering they have found wide application for exposed metal surfaces both in homes and farm buildings.

In the general classification of paint products must also be included turpentine, thinners, solvents, paint removers, etc. While these products differ widely in formula and use, they are closely allied with other paint products, and no paint department would be complete without them.

The same may be said of brushes, for in most cases, at least where the application is done by the consumer, a brush is a necessary tool without which the paint cannot be applied. The brush display, as well as the stock of allied products mentioned above, should be arranged as an integral part of the paint department.

FIGURING PAINT INVENTORY

Size of Stock

Size of the community is no accurate indication; it is the sales ability and promotion energy of the dealer that sets the size of the stock. There are small communities with big stocks and large towns with small stocks. A small paint stock is an investment of $1,000 or less. A large inventory runs up to $5,000.

THE paint department shown above utilizes both wall and island display fixtures to good advantage.

Stock turnover per year is one time or less for those who just let people come in and buy. Turnover is three to five times per year for the most active dealers and probably one and one-half times for the average dealer.

Package Sizes

The home trade will buy half-pint, pint, quart and gallon sizes as a rule, and not infrequently five gallon lots when offered to paint the whole house. Painting contractors buy some gallon and quart sizes to finish up, or for small jobs, but the bulk of their orders are for five and ten gallon lots and barrels of paint. Varnishes usually go to them in gallons and, likewise, stains. Linseed oil goes out in five gallon lots to painters and one-gallon and less to home owners. Turpentine is handled about the same as oil. White lead nearly always is drawn out by painters in 100 pound kegs, but the 50 pound and 25 pound sizes move out both to painters and home owners. Oil tinting colors, for the home market, tubes and half-pints; for painters, quarts.

Colors

A rather close estimate can be made of the proportion of each color that can be sold from paint stocks, even though popular styles change from year to year and personal preferences change. Psychologists tell us that the human eye, having lived with one color about so long, becomes tired of those light vibrations and seeks rest in the complementary color. Eyes tired of red will choose green next. Exposure to yellow for long time gives a preference for the violet tints and shades next. Too much blue gives a reaction favoring orange. Some sections of the country go predominately for one color and some for another. New England likes white, but buff, pink, blue and yellow are liked on the Pacific coast. Colonial architecture increasing in popularity calls for more white.

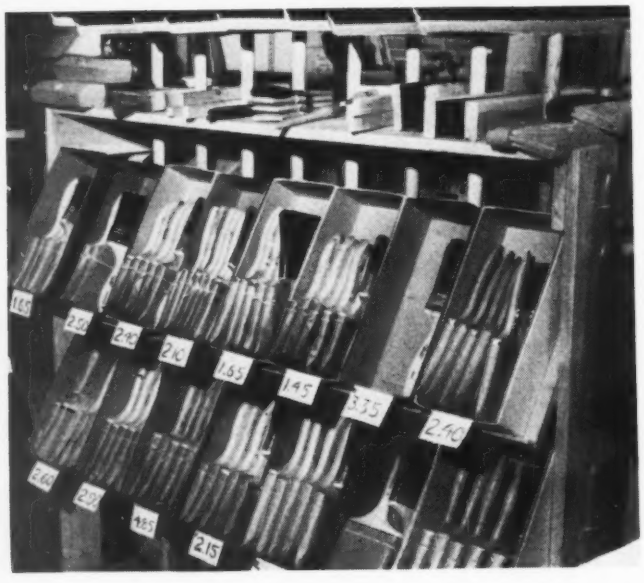
Trying to balance up all these factors and checking with experience of dealers and painters as to color preferences leads one to expect average stocks to sell in about these proportions of colors:

HOUSE PAINTS, Exterior

	Percent
White	50
Cream	10
Ivory	5
Light Gray	5
Medium Gray	5
Light Green	5
Dark Green	3
Light Brown	5
Dark Brown	5

WALL PAINTS, Interior Flat

	Percent
White	10
Ivory	25
Cream	15
Buff	5
Light Green	10
Medium Green	3
Pink	5
Yellow	10
Light Blue	5



NOTE the orderly and attractive way that brushes are displayed in the above rack.

Yellow	5	Peach	5
Red	2	Orchid	1
		Light Gray	6

ENAMELS, for Walls, Trim and Furniture

White	50	Dark Blue	5
Cream	5	Red	2
Ivory	5	Yellow	5
Light Green	5	Orange	1
Medium Green	5	Black	5
Peach	5	Gold	1
Light Blue	5	Silver	1

Oil Tinting Colors

	Percent
Reds—Venetian	2
Burnt Sienna	1
Vermillion	1
Cardinal	1
Blues—Prussian	2
Ultramarine	1
Yellows—Chrome Yellow, Light	5
Chrome Yellow, Medium	10
Chrome Yellow, Dark	5
Raw Sienna	10
Yellow Ochre	10
Greens—Chrome Green, Light	5
Chrome Green, Medium	10
Chrome Green, Dark	5
Browns—Burnt Umber	10
Raw Umber	10
Vandyke Brown	1
Blacks—Lamp Black	10
Dull Black	1

Oil Wood Stains

	Percent
Light Oak	30
Dark Oak	30
Fumed Oak	5
Walnut	30
Mahogany	5

Paste Wood Filler

	Percent
Natural Wood	50
Light Oak	30
Dark Oak	15
Walnut	3
Mahogany	2

CHECK LIST FOR YOUR PAINT STOCK

Materials—Tools—Supplies

For the Painter Market

House Paints, Exterior
Barn Paints
Stucco, Cement and Brick Paints
Metal Paints, Rust Inhibitive
Galvanized Iron Primer
Roof Paints
Shingle Stains
White Lead
Linseed Oil, Boiled
Turpentine
Alcohol, denatured
Flatting Oil, or Mixing Oil
Floor Oil
Oil Tinting Colors
Paint and Varnish Remover
Oil Wood Stains
Glazing Liquid
Texture Paints
Linoleum Lacquer or Varnish
Screen Paint
Gloss Floor and Trim Varnish
Flat Floor and Trim Varnish
Floor Seal Varinsh
Exterior Varnish
Wiping or Mopping Varnish

Supplies

Floor Wax, Paste & Liquid
Furniture Wax
Patching Plaster
Crack Filler
Sizing Glue
Cabinet Glue
Wall Paint Cleaner
Wall Paper Cleaner
Washing Powders
Glazing Points
Window Glass
Putty
Oxalic Acid
Prepared Floor Bleaches
Pumice Stone
Whiting
Plaster Paris
Wiping Rags
Masking Tape
Steel Wool

For the Home Market

Caulking Compound, Gun Grade
Paste Wood Fillers
Flat Wall Paints
Gloss Wall Paints
Semi-Gloss Wall Paints
Pigmented Wall Primer and Sealer
Calcimine
Water Paints
Porch & Deck Enamel
Gloss Enamel
Eggshell Enamel
Floor Enamel
Exterior Enamel
Automobile Enamel
Enamel Undercoater
Wallpaper Lacquer or Varnish
Dry Colors
Sand Paper
Brush Cleaner

Tools & Equipment

Flat Wall Paint Brushes
Sash & Trim Brushes
Enamel and Varnish Brushes
Duster Brushes
Calcimine and White Wash Brushes
Stencil Brushes
Paste Brushes
Smoothing Brushes, Wallpaper
Roller Stipplers
Putty Knives
Glazing Knives
Scraping Knives
Floor and Wood Scrapers
Glass Cutters
Sponges, Synthetic
Seam Rollers, canvas
Canvas Edge Trimmer
Window Screen Painting Tools
Paint Strainers
Step Ladders
Extension Planks
Caulking Guns
Drop Cloths
Overalls and Caps
Spachtling Compound

APPLICATION COUNSEL

Preparation and Application

Clean, smooth and dry are the primary requirements of the surface to be painted. Most new window and door frames and trim should be primed to specifications at the mill if possible, and only raw edges and exposed ends need to be primed on the job. Siding, flooring and exposed timbers should be given a first coat as soon as possible to prevent absorption of moisture. Knots, pitch pockets and sap streaks should be covered with orange or white shellac or aluminum paint before the prime coat is applied.

Nail holes, cracks and joints should be filled and smoothed with putty, and dirt and sawdust removed. Rough spots should be smoothed with sandpaper and dusted. Crevices, especially found at door and window frames, should be filled with plastic caulking compound applied with a pressure-gun.

Metal Surfaces

Should be swept clean of dust, wire-brushed to remove scale, loose paint and other foreign deposits, and washed with a solvent to remove grease and oils. Steel surfaces can be cleaned quickly with a flame burner or torch, or by sandblasting.

Concrete Surfaces

Brush off all dust and loose aggregate. If concrete is disintegrating due to chemical reactions, clean off surface and wash with clean water. Allow surfaces to dry before applying coatings.

New Concrete Floors and Walls

Before painting wash the surface with a zinc sulphate solution—2 pounds of Zinc Sulphate to a gallon of hot water—allow to dry and then sweep off the surface before applying.

Galvanized Iron Surfaces

Before painting new galvanized iron surfaces, wash with acetic acid or vinegar. (Commercial acetic acid 28 percent) should be diluted four parts water to one part acid. For best results allow new galvanized surfaces to

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weather for approximately four to six months before painting.

For a perfect paint job, two or three coats of paint should be applied in accordance with the manufacturer's directions.

When painting, a free, easy stroke should be cultivated, since short, jerky strokes result in an uneven surface, and too long a stroke gives an uneven surface and wears out the brush. Paint should be applied with the ends of the bristles and the sides for an inch or two; if the sides only are used the paint is not applied satisfactorily and the brush is worn out more rapidly. Brushes should be reversed at frequent intervals so they will wear evenly on both sides.

Even good paint cannot do a good job unless the surface is properly prepared. When applied over a poorly prepared surface, the result is usually plenty of trouble.

A careful inspection of the surface to be painted will reveal what is needed to put the surface into paintable condition. If previous paint jobs have been well done, the surface will be gradually chalking. This film wears away evenly, remains intact, and provides a suitable film for repainting, avoiding the expense of extensive preparatory work. Often a thorough cleaning is all that is necessary.

CHOOSING THE COLOR

Color is just as important in the sale of paint as design is in the sale of automobiles. The dealer or clerk who knows how to use colors can outsell his competitor who doesn't, three to one. Paint manufacturers include among their dealer helps, color charts, wheels and color chips, as well as suggested decorative schemes for interior and exterior painting.

Houses that appear too tall can be lowered through the use of a darker color on the roof or upper shutters. A house with too many gables should have all areas painted the same color with emphasis on the front door or first floor shutters. Dormers on a small house should be painted the color of the house, while those on a large house should be painted to blend with the roof. It is usually best to paint chimneys the color of the house. When there are windows of various sizes and shapes, paint them to match, rather than contrast with the house.

Light colors in general make things appear larger and dark colors make them seem smaller and less conspicuous. Where trim is heavy and ornate, paint body and trim alike.

HERE the paint and wallpaper department are adjacent and form a complete home decoration sales unit. This is a desirable arrangement for maximum sales results.

In the interior, a square room can be given more interest by painting one wall a different color or value. This is usually the fireplace wall, a window wall or a wall opposite a window. Long and narrow rooms can be foreshortened by painting the end walls darker than the long side walls. When the room is too high, paint the ceiling darker than the walls, and if too low, paint it lighter.

Light colors make the room seem larger and dark colors make it seem smaller. When walls and woodwork are painted the same color the rooms will have a more spacious effect.

Warm colors, such as ivory, yellow, peach, rose, tan and beige should be used in rooms receiving cool lights, usually northern and eastern rooms. The cool colors, such as gray, blue green and green, are used in southern and western exposures where warm light is received.

PREPARING TO PAINT

If the former job was done with poor paint and/or poor workmanship, the surface will require proper preparation before painting can begin.

Table of covering capacities

Material	Kind of surface	Covering capacity per gallon		
		Primer, or 1st coat	2d coat	3d coat
Exterior paint	Plain siding and trim	468 sq. ft.	540 sq. ft.	630 sq. ft.
" "	Exterior trim	850 " "	900 " "	972 " "
" "	Porch floors and steps	378 " "	504 " "	576 " "
" "	Shingle siding (not including trim)	342 " "	423 " "	
" "	Shingle roofs	150 " "	250 " "	
" "	Picket fences (average type)	650 " "	675 " "	675 " "
" "	Plain fences (average type)	468 " "	540 " "	630 " "
" "	Brick	200 " "	400 " "	420 " "
Stain	Shingle siding (not including trim)	150 " "	225 " "	
"	Shingle roofs	120 " "	200 " "	
Waterproof cement paint	Smooth face brick	100 " "	150 " "	
" " "	Smooth cement walls	120 " "	162 " "	
Exterior paint	Sheet metal (flat)	550 " "	600 " "	
" "	Corrugated metal[1]			
" "	Steel sash	981 " "	1,000 " "	1,350 " "
Interior oil paint	Doors and windows	603 " "	495 " "	540 " "
Flat finish	Smooth plaster	720 " "	630 " "	700 " "
" "	Sand-finish plaster	297 " "	450 " "	486 " "
Gloss or semigloss	Smooth plaster	720 " "	540 " "	540 " "
" " "	Sand-finish plaster	297 " "	395 " "	450 " "
Glazing and mottling	Smooth plaster	1,080 " "		
" " "	Sand-finish plaster	900 " "		
Water size	Plaster	720 " "		
Oil size	Plaster	720 " "		
Calcimine	Plaster (sized)	240 " "		
Casein paint	Over-painted surface	423 " "		
" "	Smooth plaster	540 " "	700 " "	
" "	Sand-finish plaster	356 " "		
" "	Cement or concrete block	333 " "		
Stainfill	Floors	505 " "		
Shellac	Floors	680 " "		
Varnish	Floors	540 " "	540 " "	
Wax and polish	Floors (over shellac)	1,080 " "		
Floor sealer	Floors (maple and pine)	630 " "	1,260 " "	
" "	Floors (oak)	720 " "	1,260 " "	
Enamel	Doors and windows	603 " "	405 " "	504 " "
"	Picture molding, chair rail (up to 6" wide)	1,200 lin. ft.	810 lin. ft.	810 lin. ft.
Interior oil paint	" " " " " "	1,200 " "	900 " "	900 " "
" " "	Floors	540 sq. ft.	450 sq. ft.	

[1] Same as for sheet metal, but add 9 percent to flat area.

SPRINGTIME IS PROFIT TIME!

when you feature

AMERICAN

"Our Best"

HOUSE PAINT

What do your customers want in a house paint . . . brilliant beauty . . . smooth, easy brushing . . . maximum hiding power . . . lasting protection? They get all these and more from American "Our Best." In addition to giving bright, white beauty, American "Our Best" contains reinforcing pigments that retard excess chalking. When applied under proper conditions, the possibility of blistering, cracking or peeling is practically eliminated. And no paint made brushes easier or has greater hiding power.

Satisfaction Plus Profits

What do *you* expect from a paint line . . . satisfied customers . . . high mark-up . . . repeat business? You get them when you sell American "Our Best." Backed by 66 years of experience, this great paint delivers a perfect paint job to your customers, maximum profits to you. Available in white, black and attractive colors. Color card on request. Now is the time to order!

OTHER AMERICAN PROFIT BUILDERS

SUPERIORITY UNIFORMITY

THE American VARNISH CO.

ESTABLISHED 1883

1136 N. NORTH BRANCH ST. CHICAGO 22, ILLINOIS

Manufacturers of varnishes — paints — stains — lacquers — synthetic enamels — cello film — soldering flux and special coatings.

To make the surface clean, smooth and dry, it may be necessary to remove chipped and peeled paint by burning and scraping. When the blow-torch is used, the flame should be directed horizontally or downward, following with the scraper while the loosened film is soft. There should be just enough heat to raise the film and avoid charring or setting fire to the wood. Extreme care must be used on account of fire hazard.

When filling cracks the putty should be pressed into the cracks, and nail holes cut off and smoothed with a putty knife. At least one coat of paint should be on the wood and dry before putty is used. Closing and sealing of large cracks can be done with a caulking compound forced into the crevice with a pressure-gun.

Sometimes the surface can be smoothed and blemishes removed with a wire brush, sandpaper or steel wool.

Painting Plaster

Plaster surfaces should be examined for construction faults before the paint is applied, and danger of water leaks should be eliminated.

If plaster has been applied directly on tile, brick or cement construction, the surface should be examined for signs of efflorescence. When this condition exists, the affected area should be replastered, or a lathing or waterproofing used on the tile. A zinc sulphate solution should not be used on plaster.

Damp plaster walls can now be painted safely by selecting the proper paint materials. Glue and varnish sizes should be avoided. To insure against blistering and peeling, select oil base rather than varnish base paints.

And always follow detailed directions for use of paints.

For specific paint jobs, such as flooring, roofing, farm buildings, etc., best results are obtained by following directions given by the manufacturer. If special problems arise, paint manufacturers will be glad to give more specific and detailed instructions.

SUGGESTIONS FOR NON-PROFESSIONAL PAINTERS

For promotion of better painting results by so-called amateur painters—"most of whom can turn out a mighty neat performance if they try"—the Canadian Paint, Varnish and Lacquer association has issued 14 rules. Some of these, it is commented, may be new, but most of them are long established and fundamental. All are simple and it is suggested that they be reviewed and observed when a paint job is to be done.

The 14 rules are as follows:

1. Use a good quality paint. If the job is worth spending time on, it deserves a paint that will give best results.

2. Stir the paint thoroughly before using. Everybody knows that should be done, but plenty of people still are inclined to skimp on the stirring.

3. Be sure that the surface to be painted is absolutely free from dirt, oil or grease—and of course make sure it is dry.

4. Follow the directions on the can—the manufacturer really knows best how his product should be used. He has spent a lot of time and money to find out.

5. When, or if, paint needs thinning, thin it sparingly—with turpentine. Don't try thinning with linseed oil. The paint may go farther if you do, but it won't stand up as well because the careful balance between oils and pigments has been upset.

6. Use a good quality brush. It pays off in a better paint job.

7. If it is a new brush, give it a 24-hour soaking in linseed oil before putting it in the paint.

8. Use a sensible size of brush. Don't try to do a wall with a little brush, and don't try to do fine work, or get into tight corners, with a big brush.

9. Allow plenty of time between coats. Not just enough time so that the paint is no longer tacky, but enough time so that it has dried hard and firm.

10. Do your painting when the air is warm and dry for best results. In interior painting, make sure that there is plenty of air circulating.

11. In choosing paint colors from color chips in paint dealers' stores, remember that the color of the finished job will be somewhat deeper than that of the color chip, because the color has been applied to a greater area.

12. If the surface hasn't been painted before, use a good primer sealer undercoating for the first coat.

13. Two thin coats are always better than one thick one.

14. Remember the simple rules of color—that blues, greens and allied tints are cool colors and that yellows and orange shades are warm; that light colors in a room give an impression of greater spaciousness and darker shades do the opposite.

HANDLING PAINT CUSTOMERS

It should be needless to say that the first requisite in the handling of paint customers is to know the merchandise. This means knowing what each material in stock will do and what it will not do. It is very poor business to sell a customer a paint which you are not sure yourself will be satisfactory for a particular job. That is taking a big chance with your reputation as an expert. And that reputation as an expert is voiced from person to person to increase your business. It is human nature, unfortunately, to pass unfavorable gossip more readily than the complimentary. Therefore if a dealer makes a poor recommendation as to a material to do a job, particularly if the customer applies it himself, this poor recommendation can do the dealer a great deal of harm.

THIS wallpaper display panel employs entirely controlled lighting. Care must be taken in any display of merchandise that is highly colored that the lighting renders it in its true shades.

CUTS PAINTING MAINTENANCE COSTS AS MUCH AS 40%

NEW DEVOE HOUSE PAINT MAKES EXTERIORS SPARKLING WHITE WITH

First on the market—there is no other paint just like Devoe One-Coat White House Paint! Its performance on 1,861 jobs *proves* that this great new Devoe paint brings substantial savings at no sacrifice in the quality of the finished job! It gives the most dazzling, bright, *white* repainting job your customers have ever seen. Its wonderful leveling, smooth-flowing performance makes a real hit with painters. And its beauty is long-lasting because the enamel-like gloss finish is fume resistant and self-cleansing.

What a spring-season profit booster for you!

Yes, Sir! Devoe One-Coat House Paint is the answer to your Spring-Season profit problems! Because it's *the* answer to your customers' repainting problems!

Right now, when other costs are mounting higher and higher, it gives you a chance to offer a *better* product, that does a *better* job at a whacking big saving! That's a proposition that has never yet failed to sell itself to consumer and painter.

Want the full story on this great profit-maker? Want to make sure your stocks are ample when the robins sing "Start painting"? Want an eye-opening demonstration of dazzling whiteness and one-coat covering power? Phone your nearest Devoe Branch or write today to Dept. A-5.

DEVOE PAINT

DEVOE & RAYNOLDS COMPANY, Inc.
787 First Avenue New York 17, N. Y.

Know Your Products

The dealer should secure a thorough grounding on the methods of application of various materials, the properties of them all as well as a knowledge of the various ingredients of the many paints, varnishes, lacquers, casein paints, stains, waxes, sealers, thinners, oils and all the other items which comprise a complete paint stock.

Classify Associated Items

It would pay to go over the whole stock in your display room, item by item. Select one item then look around to see what you have to associate with it. Make lists of the various associations you find, have the salesmen study them. It will pay well.

TRAINING THE STAFF TO SELL PAINT

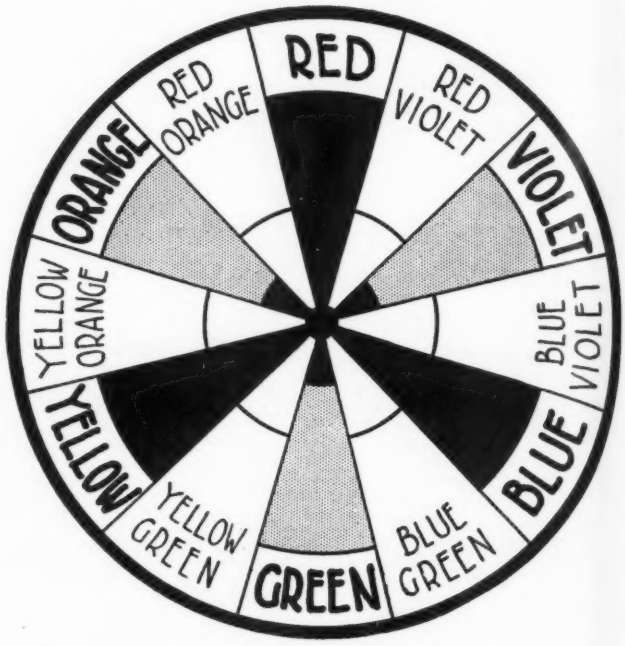
It is not difficult, even if commissions are not paid to clerical and yard help, to make employees understand that their jobs are dependent entirely on sales, and that increased salaries are contingent on increased company earnings.

Nor need the training be aimed only at turning evenings and leisure hours into profit time. Truck drivers, without taking any appreciable amount of time from their regular duties, can do telling missionary jobs in the sale of paint. That is particularly true of the truck driver employed by a yard that serves the farm trade. Most truck drivers can be taught to look for a limited number of things on the farms to which they make deliveries. The need for paint is one of the easiest things to see, but the driver must be taught to see it.

A certain amount of paint sells itself. A little effort increases sales. A little technical knowledge and some color sense, inherited or developed, boosts sales into the satisfactory profit class. With everyone in an organization trained to find and develop paint prospects, paint becomes a big profit item. There is hardly an adult alive who has never bought paint, and there is hardly an adult who does not regret that at one time or another he did not buy paint soon enough. The trained paint-conscious employee can develop many tardy prospects into immediate customers, make new friends for the lumber yard, and develop sales of other materials.

Strong Profit Item

Through proper training the employee can be made to see and note the condition of the things you have to sell to every farmer he visits. Beyond this he can be trained to make a few simple suggestions with regard to one or more of the needs he observes. What sales effectiveness he can develop beyond that depends in part on the training and encouragement he receives; in part on his own native ability to develop. With few exceptions, however, he will start and remain purely negative as a sales factor without training.



RED—No pigments are pure red. See orange red and red violet for nearest colors.

ORANGE-RED—Bulletin red, venetian red, burnt sienna.

ORANGE—Orange or dark chrome yellow, indian yellow.

ORANGE-YELLOW—Medium chrome yellow, raw sienna, yellow ochre, cadmium yellow.

YELLOW—No pigments are pure yellow. Mix medium chrome yellow with light (lemon) chrome yellow.

GREEN-YELLOW—Light (lemon) chrome yellow, zinc yellow, gamboge, aureolin.

GREEN—Light, medium or dark chrome green, chromium oxide.

BLUE-GREEN—Chrome green dark.

BLUE—Prussian blue, chinese blue.

VIOLET-BLUE—Ultramarine blue, cobalt blue.

VIOLET—Tuscan red, rose pink, indian red, orchid tinter.

RED-VIOLET—Rose lake, carmine.

Reviewing what we learned in school by looking at the color wheel, we remember that the three primary colors are red, yellow and blue, that the mixing of any two primary colors produces a secondary color; yellow and blue produce green, red and blue produce violet, and yellow and red produce orange. Thus, green, violet and orange are secondary colors as they are made by mixing two primary colors. Or, if we carry this one step further and mix one secondary, with one of the primaries next

THIS department illustrates several good display features: the rack for paper display at the far left, and the arrangement of paint at the ends of the sales counter.

Join the Big Swing to PITTSBURGH PAINTS with THE BIG DOUBLE PLUS!

COLOR DYNAMICS . . . LIVE PAINT PROTECTION

EVERY day, straight across America, the big swing is to Pittsburgh Paints because of the growing importance of the greatest pair of sales features in the paint business—COLOR DYNAMICS and LIVE PAINT PROTECTION.

No other paint manufacturer can match the advantages in performance and service which they give to dealer and consumer alike.

Now is the time to cash in on the constant flood of advertising and sales promotion which is causing the demand for Pittsburgh Paints to rise to new sales records everywhere.

For a quality line of paints which is better than ever today—why not investigate the possibility of selling Pittsburgh Paints in your community? For complete details, wire, write or phone us. Pittsburgh Plate Glass Company, Paint Division, Pittsburgh 22, Pennsylvania.

PITTSBURGH PAINTS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

to it on the color wheel, we get what are sometimes called tertiary colors, such as yellow green, green blue, violet blue, red violet, orange red and orange yellow. By varying the proportions of the colors mixed we can, for instance, have a yellow green which is more yellow or more green, depending on which of the mixed colors predominate.

Thus, by using the three primary colors we can obtain any color of paint we wish, even down to the subtlest variation, merely by using the proper proportions. However, pigments are very seldom pure primary colors, and therefore the actual color makeup of the pigments must be considered when mixing. As an example, venetian red is actually an orange red, whereas roselake and carmine are red violet, there being no pure spectrum red.

The accompanying tables gives the pigment names which may be classed under the various color wheel names.

PITFALLS

Some dealers have tried setting up a glorified paint department, as they call it, and have not achieved the results they hoped for. Here are shortcomings most often found to be the cause for mediocre results. (1) The paint department is tucked away in a corner customers don't find. (2) Displays are allowed to collect dust. (3) The paint department has become a storage center for all sorts of odds and ends dumped there by one or another of the staff. (4) None of the employees are paint conscious or sales minded. No one knows the stock, or which paint is for what purpose. (5) Little or no advertising and personal selling has been done. (6) Color cards are scrambled, window and counter display materials are out of sight, or unsightly from finger marks or battering.

Note the emphasis on good housekeeping. Housekeeping is quite a chore, but few tasks are more important. One of the effective selling appeals of paint is cleanliness and the sanitary benefits it brings into the home. Dust coated stock, finger marked, dirty color cards and displays do not back up that appeal.

THE WALLPAPER DEPARTMENT

Wallpaper is strictly a decorative item. It is used exclusively as an interior wall finishing material. While a small percentage of the customers apply wallpaper themselves, by far the greatest amount is installed by paperhangers. The work requires a high degree of skill and unless good workmanship is practiced, the finished result will be highly unsatisfactory.

Selection of wallpaper is always done by the woman of the home, and even when the decoration work is contracted through a professional interior decorator or a decorating contractor, the woman of the home makes the actual selection of patterns and colors.

These facts present a rather complicated merchandising picture to the building products dealer who contemplates entering the field. On the surface it appears to be intricate, and a service that requires considerable attention and promotion for the volume of business it might return.

But judging from the amazingly high percentage of dealers who have added such service in the past ten years, it must afford a satisfactory return for the effort involved. One favorable aspect of the situation is that wallpaper is a high profit item. The unit sales are frequently of substantial dollar volume, and the line is readily incorporated into the paint department as an overall home decorating department.

Manufacturers of wallpaper produce elaborate sample books of their products. They also have developed sales-tested methods of displaying full strips of each pattern from a roll so the prospective customer can get an even better idea of how the particular paper will appear when installed in a room.

To display and demonstrate wallpaper properly, considerable space is required. The area itself must be attractive not only to favorably impress the feminine customer but to display the merchandise to maximum advantage. Careful attention must be paid to lighting so the true color of the papers will be recognized. This prevents disappointment and disatisfaction of a customer who finds the applied paper is a different shade than she thought she selected.

For successful operation of a wallpaper department, a trained employe should be in charge; one who knows the product, its application, and the fundamentals of decorating. This type of work more often appeals to a woman rather than a man and many dealers have solved their sales problem with this merchandise by putting a talented, competent woman in charge.

Since very few dealers employ paperhangers on their own payroll, a cooperative arrangement must be made with the tradesmen and decorating contractors in the trading area. This is a common practice in the industry since few contractors and applicators are equipped to handle and display the products. Such a system has two-way advantage: The dealer can be sure of getting the paper that he sells applied; and the tradesmen and contractors have a place where they can send their prospects to select the papers they want.

There are also some necessary supplies used in connection with the application of wallpaper, paste, tools, equipment, etc., which the dealer can also supply to the applicators.

WINDOW displays showing home decorating items are sure sales getters, particularly during the spring and fall housecleaning seasons.

Section 5 Hardware and Related Items

THE BROAD FIELD covering items that fall under the general classification of hardware is so varied as to application that it is difficult to segregate them into one section for purpose of discussion. Some are explained more in detail in other sections of this book. (Refer to Section 2, Metal Products; and Section 6, Power and Hand Tools.)

Hardware items, as they pertain to the retail building material dealer, may be classified in three main groups: (1) Builders hardware, (2) Cabinet hardware, and (3) Accessory hardware. Each has a definite place in the dealer's function as a building products supplier. Each is used in conjunction with other items that he sells, as a necessary part of their ultimate use by the consumer.

For example, some years ago only a small percentage of the dealers carried builder's hardware; most of the volume was sold by specialized hardware dealers. Because these items are so closely allied with doors, windows, and other functional parts of a house, and it is far more expedient for a customer to deal with a minimum number of suppliers, the bulk of these items today is sold through the retail building materials dealer.

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TYPES OF METALS

Today there is no one best material for hardware. For some uses, the material must be resistant to wear; for others, resistant to corrosion, etc. Many hardware parts require great impact strength, others require great tensile strength. In many instances, volume or cost determines the kind of metal.

A few years ago, all good hardware was cast. That is not true today. Now, the form best suited to the particular part is used, and many fine locks are made of pressure formed metals.

The manufactured forms of metal are wrought, forged, drawn, and extruded. Wrought metal is produced by passing ingots of metal between rolls until it is the desired thickness. Forging is the art of shaping metals in the solid state by blows or pressure. Drawn metal is produced from rolled or extruded stock by pulling it through dies to form rods, tubes, or wire. Extrusion is the process of forcing metal in the plastic state through a hardened steel die of the desired cross-section, much as tooth paste is squeezed from a tube. These metals are in general harder and stronger than the cast forms.

Hardware metals are classified as ferrous and non-ferrous. Ferrous metals are alloys of iron, steel, cast iron, and malleable cast iron. The non-ferrous metals include copper and its alloys, such as brass, bronze, and nickelene; aluminum, tin, zinc, and alloys produced by combining these metals.

Aluminum: Aluminum is the lightest of the metals used in hardware manufacture. It is white in color with a bluish cast. It is soft, ductile and easy to machine, but the best cast forms do not wear well in bearings, or have sufficient strength for lock bolts.

A new alloy of wrought aluminum makes excellent keys. Many millions have already been supplied with builders' locks.

Polished surfaces of aluminum tend to oxidize slightly, spoiling the lustre of the finish, and the metal has some tendency to discolor. This can be prevented by a surface treatment known by the trade name of Alumilite, which has brought this metal into somewhat wider use in decorative builders' hardware.

Brass: Is an alloy of copper and zinc. The alloy used in builders' hardware—65% copper and 35% zinc—is yellow in color

Brass is resistant to corrosion, takes a beautiful finish and makes an excellent base for plated finishes. The natural finishes can be preserved by a colorless lacquer,

or maintained by occasional polishing. If allowed to age naturally, a fine patina forms that is much prized by decorators.

Bronze: Is an alloy of copper and tin. The alloy in builders' hardware, 90% copper and 10% tin, is reddish in color.

Bronz is also resistant to corrosion, finishes beautifully, and makes a splendid base for plated finishes. If allowed to age naturally it darkens into a rich statuary bronze.

Chromium: Is a hard, silvery white metal with a bluish tinge. Its principal use in hardware manufacture is as a decorative electroplating over nickel plate on brass or bronze. Chromium is very resistant to corrosion but dissolves in hydrochloric and sulphuric acids. Being somewhat harder than case hardened steel, it is also highly resistant to wear.

Iron: Is the most useful as well as the most abundant of metals. It is silvery white in color and very tenacious, malleable, and ductile. It is never used in a pure state, but is alloyed with other metals and metal-like substances to form irons and steels of widely variant properties.

Gray cast iron is not malleable. It is easy to machine and can be given any desired form in casting. Being hard it wears well; its graphitic content giving it some self-lubricating properties and good rust resistance.

Malleable cast iron is made from white cast iron by an annealing process called malleabitizing. This metal is capable of considerable distortion and soft enough to be readily machineable.

Steel is an alloy of iron and carbon refined from pig iron and scrap steel in a Bessemer Converter or other furnace which removes most of the impurities. Steel may be roughly divided into four general classifications: (1) The mild and medium carbon steels from which hardware, forgings, springs, etc., are made; (2) The harder, high carbon steels used for dies, high grade tools, etc.; (3) The alloy steels to which some other metal gives definite properties and the name; and (4) High speed steels.

Nickel: Is a silvery white metal with a yellowish cast. It does not corrode but its surface oxidizes in time, forming a white film which spoils the lustre of its finish. Its chief use in hardware is in the production of nickelene, and as an electroplated finish for chromium plate.

Nickelene: Is an alloy of copper, zinc, and nickel. The nickel content may vary from 10 to 20% depending on the properties desired.

Nickelene is white in color with a yellowish cast. It is strong, tough, and very resistant to corrosion. The only effect that severe exposure has on good quality nickelene is to slightly strengthen the yellowish cast in the metal.

Zinc: Is a bluish white metal. On exposure to air, zinc becomes coated with a film of carbonate and is then very resistant to corrosion. It is used in great quantities in the production of brass and bronze, in die-castings, and as a coating to protect iron and steel from corrosion.

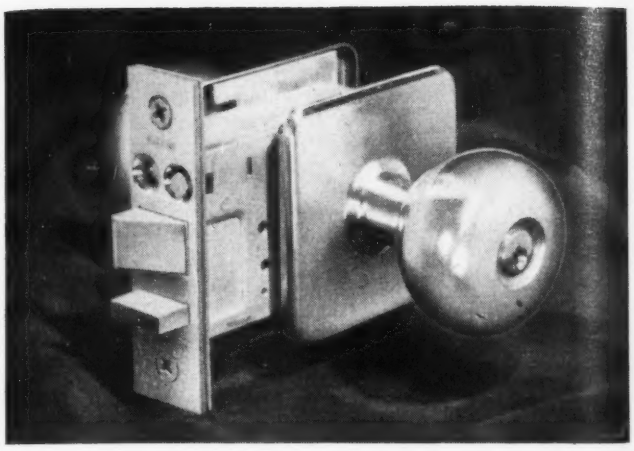
METAL FINISHES

The natural finishes of metals are created by mechanical operations which bring out the inherent beauty of the metal. This class of finish is obviously limited to the non-ferrous metals because iron and steel in a natural finish would rust.

Polished Finishes: The finest of the bright natural finishes is produced by two highly skilled operations—polishing and buffing. The polishing cuts away rough surfaces and leaves a perfectly smooth face. The buffing consists of holding the article against a succession of cloth wheels on which buffing compound is smeared. This operation brings up a high gloss finish.

Burnished Finishes: Certain small brass and bronze parts can be given a smooth surface and high lustre by a new and patented burnishing process. The parts are first rolled in steel barrels with sand and water until all surfaces are smooth. They then are rolled in wood lined barrels in abrasives which are milder in each consecutive barrel. These barrels also contain bits of leather and other materials to cushion the parts. Finally, the parts are brought to a high lustre on hand operated machines. The entire cycle requires from 50 to 60 hours.

Tumbled Finishes: Another inexpensive burnishing operation is used for small cast iron parts. They are tumbled in steel barrels in sand and water, then in steel burnishing balls or shapes. The polishing is accomplished by the peening action caused by the constant rolling of smooth steel burnishing shapes against the cast parts.



MODERN hardware craft produces articles of greater beauty, efficiency, and economy than ever before. Note the strikingly beautiful simplicity of the above lock set.

Planished Finishes: The final cold rolling operation on wrought metal is done on highly polished rolls. This leaves the surface of the metal smooth enough to serve as the final finish on inexpensive grades of butt hinges and a few other articles that can be fabricated without marring this finish.

Dull Finishes: There are two widely used methods for producing dull, scoured, satin, or wheeled finishes in natural colors. In one, the article is polished and buffed, then wet scoured with pumice. In the other method, the polished part is dry scoured with greaseless abrasive compounds on cloth wheels. Almost any degree of dullness can be obtained by either method.

Oil Rubbed Finishes: The oiled and waxed finishes given brass and bronze make them appear as they would after several weeks of natural aging. The article is first given a polished finish, after which a coat of special wax or oil is applied to the surface.

Bower Barff: This is a black, rust resisting finish on iron and steel obtained by converting the surface of the metal into a hard, non-porous oxide. This is done by heating the article to about 1,700 degrees F. in special furnaces, and then introducing live steam and producer gas. This process seals the pores of the metal and alters the texture of its surface so that it is practically impervious to moisture.

Parkerizing: This is a patented rustproofing process for the treatment of iron and steel. By means of hot chemical solutions, the surface of the metal is converted into a complex insoluble phosphate of grayish black color.

Oxidized Finishes: These finishes are produced by dipping copper or copper alloys into chemical solutions designed to produce the desired color. By varying the chemicals and treatment, various degrees of color can be obtained, even a two-toned effect.

Electro-Plated Finishes: This is a process by which one metal is deposited onto the surface of another by means of a direct electrical current.

Most electroplated coatings are very thin, being measured in ten-thousandths of an inch. In the case of chromium, 2/1,000 of an inch is a normal deposit.

Paint, Lacquer, and Enamel: As the wearing qualities of paints and similar coatings are inferior to natural metallic finishes, the chief use of paint products on hardware is to protect iron and steel parts from corrosion. To be effective, paints must be impervious to water and oxygen, if not, corrosion may form under the paint. It must also have high adhesive qualities in order not to flake and peel in service.

Lacquer is a nitro-cellulose product to which certain gums and solvents have been added. When applied to finished articles by dipping or spraying, the solvents evaporate and leave the surface covered with a protective coating. Recently developed synthetic lacquers have proved very satisfactory, and in the future they will probably be more widely used.

Lacquers are sometimes dyed with transparent organic dyes and then sprayed over finishes to give color effects.

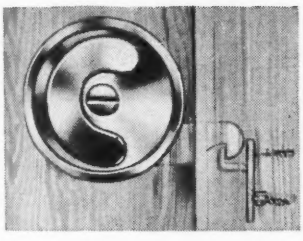
SAVES MORE SPACE
SLIDES MORE SMOOTHLY
SELLS MORE QUICKLY

When it's Sliding Door Hardware

by KENNATRACK

Practical Economy — Easy Installation.

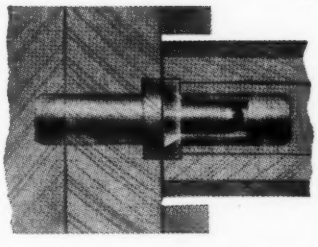
#220 KENNALATCH



Latches automatically, unlatches by natural thrust of hand. For ¾" cabinet and wardrobe doors.

#302 CONVERGING DOOR GUIDE

Brings sliding doors into alignment so that lock may engage.

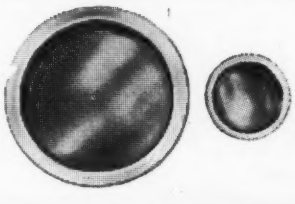


#420 KENNALOCK

Assembled unit to fit notch cut in 1⅜" door. Interchangeable left-right locking mechanism. Solid brass, finger pull plus locking safety latch.

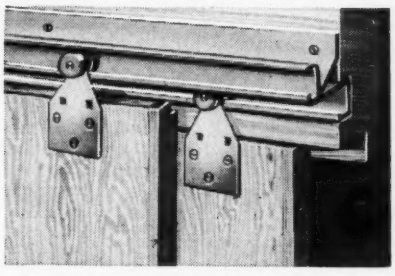
#10-20 FLUSH CUP PULLS

Solid brass. #10 used in cabinet and wardrobe doors for ¾" hole. #20 used in disappearing room doors for 1¾" hole.

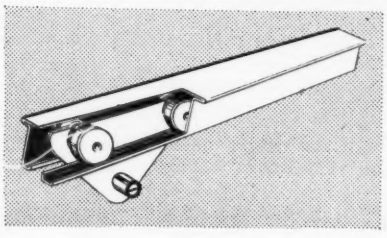


#200 KENNATRACK BALL BEARING DOUBLE RAIL

Patented offset track guarantees finger tip control of by-passing wardrobe and cabinet doors. For either ¾" or 13/16" doors with easy mounting ball bearing carriage.



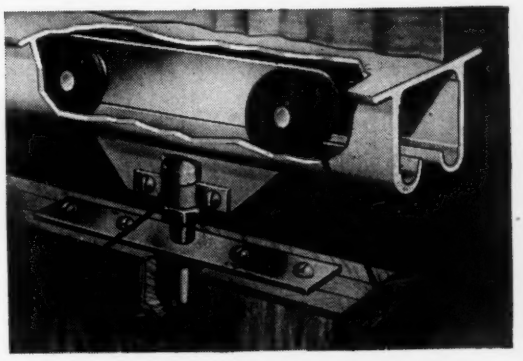
#300-350 DISAPPEARING KENNATRACK



Uses patented expansion sleeve mount. Requires less headroom space than any other known sliding door device. Eight wheels per door. #300 equipped with brass wheels, #350 with neoprene-tired wheels.

#400 DE LUXE KENNATRACK

Send for complete catalog and prices TODAY.



Truly trouble-free for heavy doors of 1⅛" to 1¾" thickness. Eight neoprene-tired wheels banish noise, guarantee smooth easy movement. Exclusive adjustable carriage permits doors to be raised or lowered ¾".

JAY G. McKENNA, Inc.

Specializing Exclusively in the Manufacture of Sliding Door Hardware

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BUILDERS HARDWARE

BUILDERS' HARDWARE

Builders' hardware falls into two classes: contract builders' hardware and stock builders' hardware.

Contract builders' hardware is sold from plans for a lump sum price and is "tailor-made" after purchase. An extensive business of this type requires a sample room and the services of an expert to manage the department.

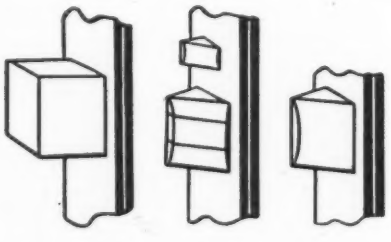
Stock builders' hardware consists of a limited variety of patterns and finishes, produced in volume and carried in stock by retailer, wholesaler and manufacturer.

The retailer can establish conditions that will make the selling of stock builders' hardware a profitable part of his business without a specialist on his payroll. These successful conditions are:

1. An active stock, in size proportionate to the market.
2. A suitable source of supply—a single, nearby source if the market is small because fast turnover is the most important factor in profit.
3. Nationally-advertised quality lines—well-known brands are easy to sell.
4. Every item displayed, labelled, shelved and boxed so that anyone can sell it.
5. A greater selection available—a sample room in a nearby trading-center and a mail-order type of catalog.
6. Expert help on call, to assist with special jobs, to advise in operation of builders' hardware department.

LOCKS

Locks may be classified according to: (1) Security, (2) Installation, the method of attaching them to a door, and (3) Function—the way they work. Security depends upon



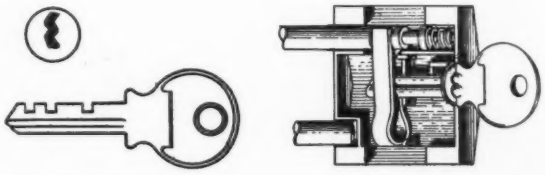
(Left to right) Deadbolt, deadlatch and springlatch.

the lock's resistance to unauthorized entry. Thieves and vandals may attempt to open a lock with a skeleton key, duplicate key, by picking, or by prying.

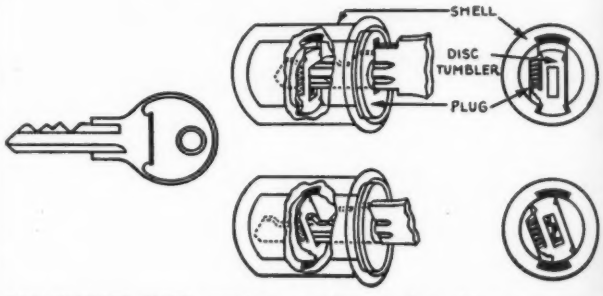
Security from prying depends on the size and type of the lock bolts, of which there are three types: deadbolts, deadlatches, and springlatches. A deadbolt is a manually operated square ended bolt which is positively locked in both positions.

A deadlatch has, in addition to a latchbolt, a small latch which deadlocks the latchbolt so it cannot be pried by end pressure.

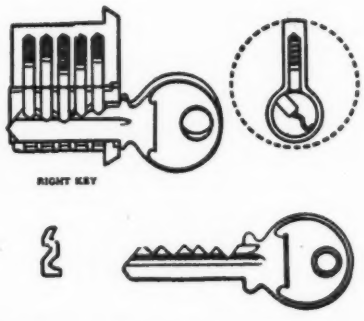
THE 5 MAJOR TYPES OF LOCKS



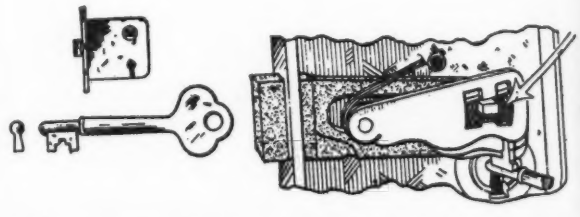
WARDED LOCK—works on principle of set wards in mechanism that coincide only with correct key.



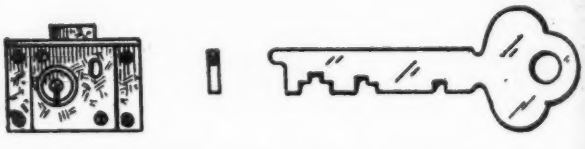
DISC-TUMBLER LOCK—consists of plates and tumblers in a plug and cylinder. Correct key aligns plates and permits plug to turn.



PIN-TUMBLER LOCK—similar to disc, except alignment of pins is necessary instead of plates. This type permits an almost unlimited combination of keying.



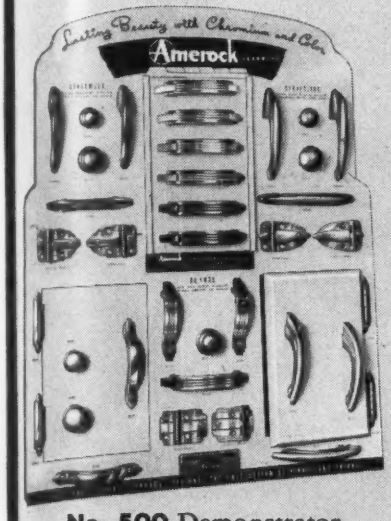
BIT KEY LOCK—A cylindrical key with a wing bit lifts one or more lever tumblers to actuate this lock.



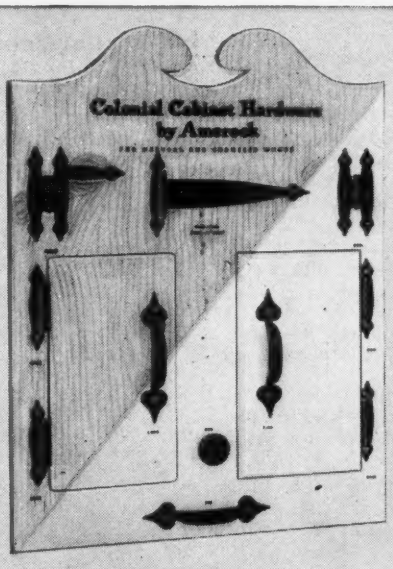
SECURE-LEVER LOCK—Has a flat key that ups tumblers and lines up their gates to actuate bolt.

Amerock CABINET HARDWARE

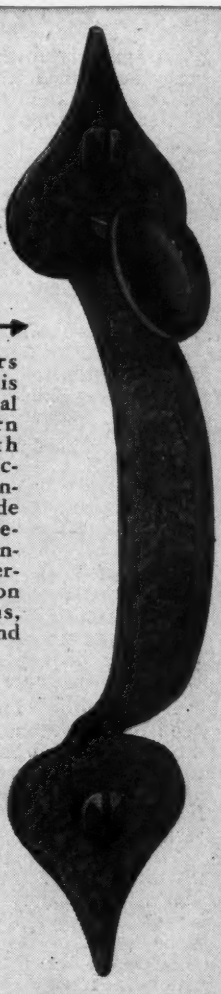
Now complete in Polished Chromium, Colonial Black, Brass and Bronze, for every Residential and Commercial use



No. 500 Demonstrator

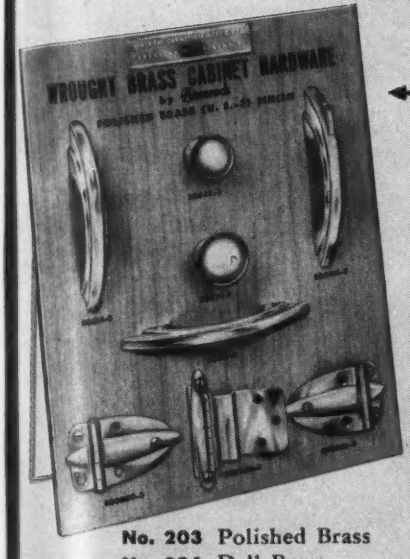


No. 1625 Demonstrator



Your customers will appreciate this authentic Colonial "Heart" pattern combined with modern construction and mechanical features made famous by Amerock. For residential and commercial use—recreation rooms, kitchens, stores, hotels, and restaurants.

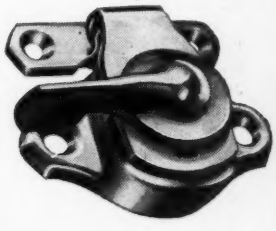
Sell more cabinet hardware with this complete No. 500 Demonstrator. Four beautiful "matched" designs in Chromium and color suit every preference. Complete price range for every budget — and a part for every cabinet application.



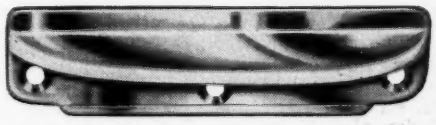
No. 203 Polished Brass
No. 204 Dull Brass
No. 210 Dull Bronze

Broaden your Cabinet Hardware sales with "matched" cabinet hardware in Polished Brass, Dull Brass, or Dull Bronze finish.

No. 7005 Demonstrator



Improved window hardware in four finishes. Demonstrating display explains operation — practically sells itself.



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A springlatch has a beveled, spring-actuated bolt which may be pushed back by the end pressure, or retracted by means of a knob or handle.

Security from picking and skeleton keys depends on the obstacle to be overcome to operate the bolt. Key operated locks fall into two types; Warded type, in which the obstacle consists of fixed constructions within the lock which interfere with the movement of the key, unless the key has grooves or notches coinciding with the wards; and the Tumbler type, in which the obstacles consist of one or more movable tumblers which are moved into a certain position by the proper key.

Security from duplicate keys is obtained by using a lock which has a great number of different key changes. Locks have as few as four changes, while others have an almost unlimited number of key changes.

The most difficult to pick, impossible to open with skeleten keys, and with practically unlimited key changes are pin tumbler locks, the most secure of all key-operated locks.

Types of Locks and Keys: The five types of locking construction used most are: (1) Warded, (2) Disc-tumbler, (3) Bit-key, (4) Lever-tumbler, and (5) Pin-tumbler.

Warded Locks: Warded locks are the cheapest type. Their construction is such that cuts in the proper key will clear wards in the lock, thus actuating the bolt. This simple mechanism provides little protection. Generally made with only six key changes, every sixth lock has the same key no matter how many are in use.

Disc-tumbler Locks: Disc-tumbler locks are widely used in the automotive industry. This has brought them into general use because of their similarity in appearance to pin-tumbler cylinders and keys. The mechanism is composed of a series of plates and tumblers which extend from a plug into a shell, thus preventing the plug from rotating.

The key aligns these plates so as to bring them within the diameter of the plug, which may then rotate thus operating the lock. This type is used principally in padlocks, cabinet locks, automotive locks, and vending machine locks.

Bit-key Locks: The bit key lock is operated by a key which has a solid cylindrical shank and a stem with a wing bit. The key lifts one or more lever-tumblers and aligns their gate so that a post on the deadbolt can pass through them. This type affords security ranging from poor to excellent, the degree depending on the kind and number of tumblers used. Bit-key locks are used for inside locks of houses.

Secure-lever Locks: This type of lock has a flat key with bits or cuts along one side. This key lifts the tumblers and aligns their gate so that a post on the bolt can pass through the gate. This type also provides security from poor to excellent, depending on the mechanism; and it is used extensively for cabinet locks.

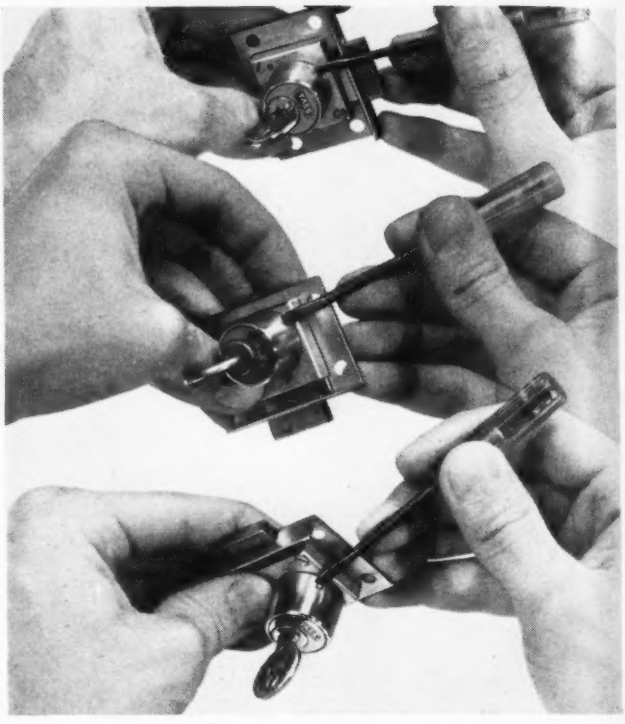
Pin-tumbler Locks: These are the most secure of all locks operated by keys. This type is composed of a series of pin tumblers in pin chambers which extend from the plug into the shell, preventing the plug from rotating. The key lifts these pins to a point where the joint between the pin and its driver corresponds exactly with the joint between the plug and the cylinder, thus freeing the plug to rotate within the cylinder. This type lends itself to more key changes and greater master-keying possibilities than any other type. They should be used where the utmost protection is desired.

KEYING

A series of locks may be arranged as to their keys, in any of three different ways: (1) All different, each key opening only one lock, (2) Master-keyer, with all locks different, but with a master key which operates all the locks, and (3) All alike, any key opening all of the locks.

Under plan 1, the wards or tumblers in each lock are made so that they can be operated by only one key. Locks carried in stock are usually made in this way.

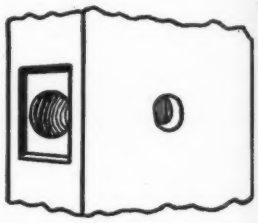
Under plan 2, the construction is such that each lock can be operated by two different keys: One, the "Change key" and the other the "master key." Master key locks must be made to order. Plan 3, the wards or tumblers are identical in every lock so that a single key will operate them all.



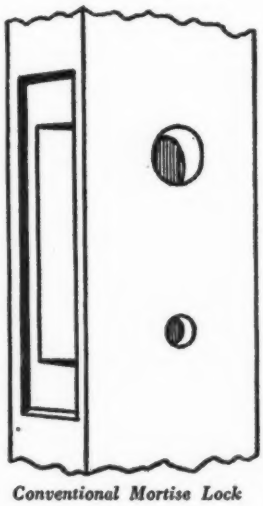
NEW 3-way cabinet lock can be adapted for cabinets, cupboards, and drawers, by means of a patented rotating cylinder.

INSTALLATION

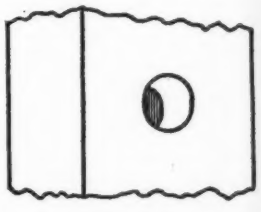
Locks may be classified by method of installation as (1) Mortise Locks, (2) Bore-in Locks, (3) Rim Locks, and (4) Half Mortise Locks. Generally, the first should be chosen for security, the second for ease of installation. Copies of colonial box (rim) locks are sometimes used for appearance, but night latches are the only rim locks widely used on full size doors. Most drawers and cabinet doors are thin. For this reason most cabinet locks are made for half mortise installation.



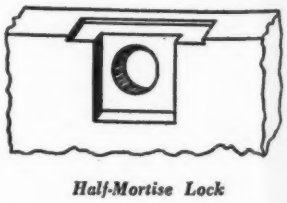
Bore-in type



Conventional Mortise Lock



Rim Lock



Half-Mortise Lock

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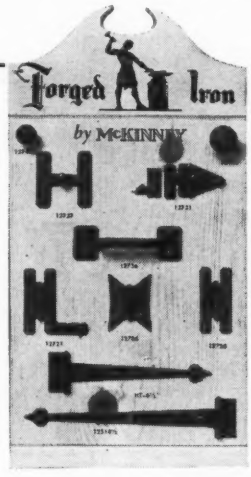

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Rust Resisting
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Living Rooms, Game Rooms, Kitchens, Dens . . . Cabinets for any room in the house. Popular for application on painted surfaces and natural wood finishes. All pyramid head, double-slotted screws are aluminum.

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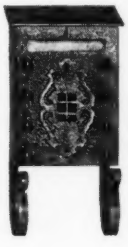
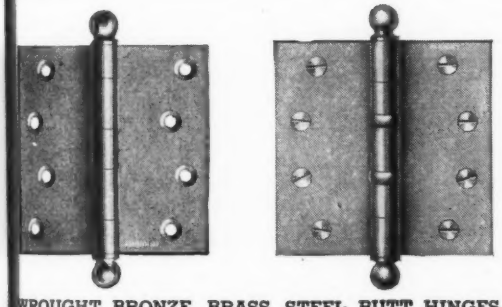


HINGES

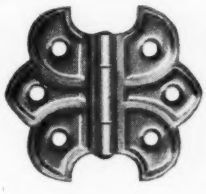


WROUGHT BRONZE, BRASS, STEEL BUTT HINGES

Furnished in all standard sizes and finishes and available with either plain joints or bearings. They are manufactured in light, regular and extra heavy weight for interior and exterior use. Bearing butts optional; ball bearings or the new Oilite bearings.

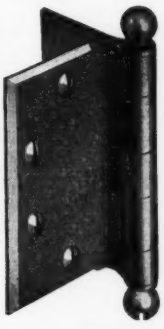
PLATE WROUGHT STEEL FULL SURFACE ORNAMENTAL HINGE

Used principally for hanging doors in cupboards, bookcases, china closets and light cabinet work.



WROUGHT STEEL HALF AND FULL SURFACE HINGES

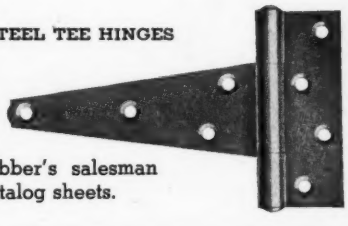
For wood doors only with wood jambs. Only door jambs need be mortised, beveled leaf fastened to surface of door.

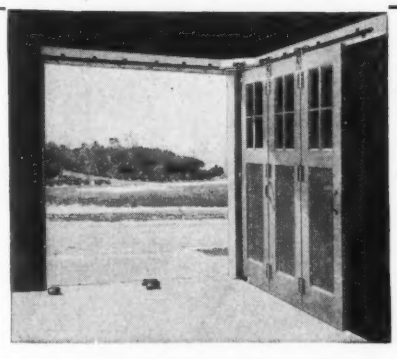


WROUGHT STEEL STRAP HINGES—complete range of sizes and weights for every conceivable purpose.

WROUGHT STEEL TEE HINGES

Made in various sizes and weights. Our catalog gives complete specifications—or ask jobber's salesman for data from his catalog sheets.





GARAGE HARDWARE

McKinney Garage Hardware includes "Around the Corner" *Three* and *Four* Sets (Illustrated).

Under the Header, Sliding-Folding, and Swinging Door set. All necessary hardware including track packed in strong wooden box.

WROUGHT STEEL HASPS

Strong safety hasp especially suitable for use on garages, barns, stables, implement sheds and other out-buildings.

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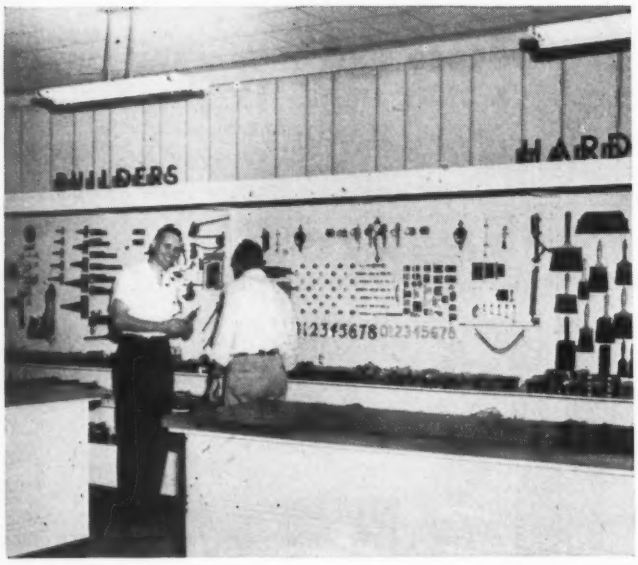
DEPENDABLE HARDWARE BY McKINNEY



BUILDERS' and cabinet hardware displays have unusual eye-appeal, but are sure "sales getters" too.

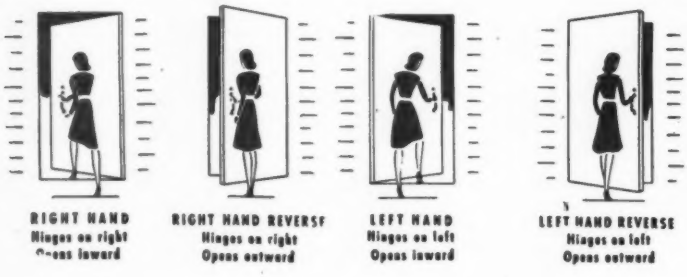
BUTT HINGES

The leaves of mortise butt hinges are swaged; i.e.; slightly offset at the barrel, which permits them to come closer together. Strap and tee hinges, and butt hinges for surface application are not swaged.

Two dimensions are needed to describe mortise butt hinges; the first is the length of the joint (not including the tips), the second, the width when open. Thus a 5 x 4 butt hinge is 5 inches high and 4 inches wide when open. Only one dimension (the height) is given for half-surface, full surface, and half mortise hinges.

Many types of butt hinges are available with either plain or ball bearings. Ball bearing hinges should be used on doors used frequently and those having closers.

The size of hinge required for a given door depends on the thickness and weight of the door, and the throw necessary to clear any projecting casings.



When it is necessary for the door to clear projecting trim or chair rail, the minimum size of hinge may be determined by adding the thickness of the trim to twice the thickness of the door and (because the hinge leaf is not mortised entirely through the thickness of the door) deduct one-half inch.

Mortise Butt Hinge: One leaf is mortised into the jamb, the other into the edge of the door. This is the most popular type because it is neater in appearance and costs less than other types.

Half-Surface Hinge: The jamb leaf is mortised into the jamb, the door leaf is attached to the face of the door stile.

The chief use of this stile is for kalamein doors in hollow metal frames. It is also sometimes used with wood doors in wood frames to avoid mortising the door leaf.

Full Surface Hinge: The jamb leaf is attached to the face of the jamb; the door leaf to the face of the door stile. These hinges are made in two types; one is for kalamein doors in channel or angle iron frames; the other for tubular steel doors in channel or angle iron frames.

Half Mortise Hinge: The jamb leaf is attached to the face of the jamb; the door leaf is mortised into the edge of the door. This type is used for wood or hollow metal doors in channel or angle iron frame.

DOOR CLOSERS

Just as doors are intended to provide comfort, security, privacy, etc.; the door closer was developed to assist in fulfilling the same "wants" by eliminating the necessity for remembering, by closing safely, quickly, and quietly, and by latching securely; in other words to control doors so that they function automatically.

Practically all doors need closers, and anyone buying a door or hardware for a door is a prospective customer for this very closely related item.

There is a wide selection of closers on the market. Most are the pneumatic, liquid, or spring type, and they are supplied in a number of sizes; so a suitable closer can be selected for any type of door and for any type of operation.

A recent liquid type has been introduced that is completely reversible; can be installed easily and quickly on either a right or a left hand door.

GARAGE DOOR HARDWARE

Garage doors are supplied in four main types; (1) Hinged doors, (2) Folding-sliding doors, (3) Swing-up doors, and (4) Roll-up doors. Each type has a suitable type of hardware, most of which is supplied by the door manufacturer to insure the proper operation of his particular unit.

There is a considerable replacement market for this kind of merchandise, and it is therefore advisable for the dealer to acquaint himself with the various mechanisms that actuate and secure the various types of doors available. Manufacturers' catalogues have these items listed and described, and are an excellent reference source for this information.

For further information, see Section Garage Doors.

HARDWARE FOR CASEMENT WINDOWS

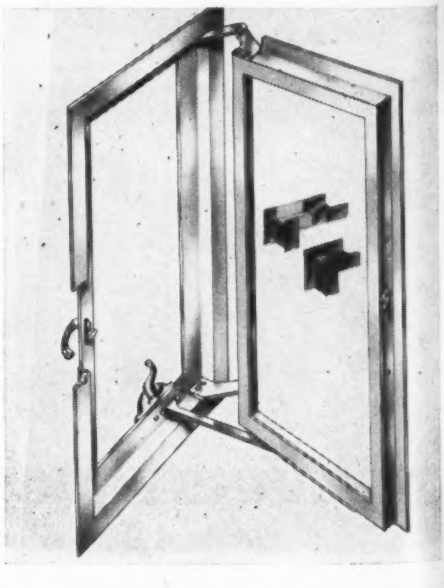
Casement windows have numerous advantages and are very popular with many designers, builders, and home owners. In addition to their picturesque qualities, no other windows provide such complete ventilation and such an unobstructed view.

For many years casement windows presented a screening problem until the advent of the direct-acting casement adjuster. This adjuster allowed the casement to be controlled through the screen, although its action was somewhat awkward.

The perfection some years ago of the angle-drive internal gear casement operator, however, has had significant influence on the popular acceptance of wood casements. This ingenious device not only enhances the appearance of the window, but is effective in use as well.

Now it is possible to have complete casement control at all times without disturbing the screen. The sash may be opened or closed, or held open at any degree with the under screen angle-drive operator.

Additional accessory hardware has also been developed



THE development of ingenious casement window hardware has added much to the service and efficiency of this popular type window.

Selling Fast!

EAGLE UNIVERSAL DOOR CLOSER . . .

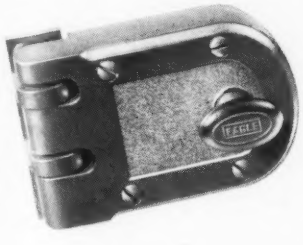
The One Closer Designed for Over-the-Counter Sales

For many years, dependable Eagle padlocks, night latches, dead locks, cabinet locks as well as nuts, screws and bolts have been profitable shelf items for dealers.

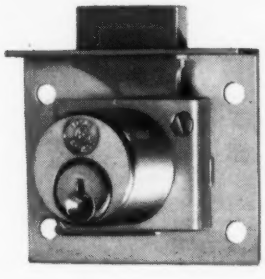
With the recent introduction of a truly universal door closer, Eagle has revolutionized closer sales for dealers by providing one standardized package that makes possible over-the-counter sales on a practical and profitable basis.

Whether your trade requires closers for right-hand, left-hand, hold-open or non-hold-open operation, this one standardized Eagle Door Closer fills any of these requirements without mechanical change.

If you haven't already received the complete story on this established Eagle development, it will pay you to write for it today.



EAGLE DEAD LOCKS



EAGLE CABINET LOCKS

SCREWS • NUTS • BOLTS

The **EAGLE LOCK** *Company · Terryville, Conn.*

such as locking fasteners attached midway up the sash, whereby the sash may be locked and unlocked without disturbing the screen. Exterior cleaning of casements has been simplified by the use of extension hinges which allow ample space between the jamb and the open casement.

To eliminate any leakage of winter winds and to make a tight contact all of the way around, the automatic top closer has been developed. This efficient appliance is easily attached at the top of the casement and pulls the sash in tightly against the frame, at the same time helping to prevent and overcome warping.

CABINET HARDWARE

In recent years there has been an increasing demand for modern cabinets, built-ins, sliding closet doors, and other home conveniences that provide maximum beauty and efficiency. To meet this demand the hardware industry has produced a wide variety of cabinet hardware; a type and style to fit every need and every taste.

A large majority of the new homes built during the past few years have had these features incorporated in them; but a recent nationwide survey clearly indicated that the majority of older homes do not have these modernizing touches.

For the building material dealer this survey should be highly significant, as it is a compelling index of a tremendous potential for additional business; a market waiting for him to demonstrate the beauty and practical utility of modern cabinets and cabinet hardware.

Women are the key to this market, and for this reason, cabinet hardware manufacturers have designed their products with maximum beauty; using various metals, designs, and even plastic inlays to fit the decorative tastes of all feminine buyers.

Much of the technical information covering these products has already been discussed in the previous section about builders' hardware: the metalcraft techniques are the same. There is also quite a similarity in the basic design of cabinet locks and hinges. However, the cabinet hardware line does not end with hinges and locks.

In addition to pulls and fasteners of various types there are such specialized items as mechanisms for sliding closet and cabinet doors, fully inset handles and catches for various types of panels, and many others.

Manufacturers of these products have developed attractive catalogues and store displays to explain and demonstrate their beauty and their function. By using them to the fullest advantage, the dealer will find a ready demand for these items, and a steady profit.

ACCESSORY HARDWARE

Under the classification of accessory hardware may be catalogued many hundreds of items, for this broad heading includes those articles that are designed for use in the home; they are functional, decorative, or used in home care and maintenance. Some building material dealers carry many of these items, others only a few. It is difficult to advise just how far a dealer should go in stocking and selling this merchandise. Much depends on local conditions. There are some, however, that stand out in importance, as they have a direct utilization with other materials the dealer handles, and it is these that will be covered in this section.

FORGED IRON HARDWARE

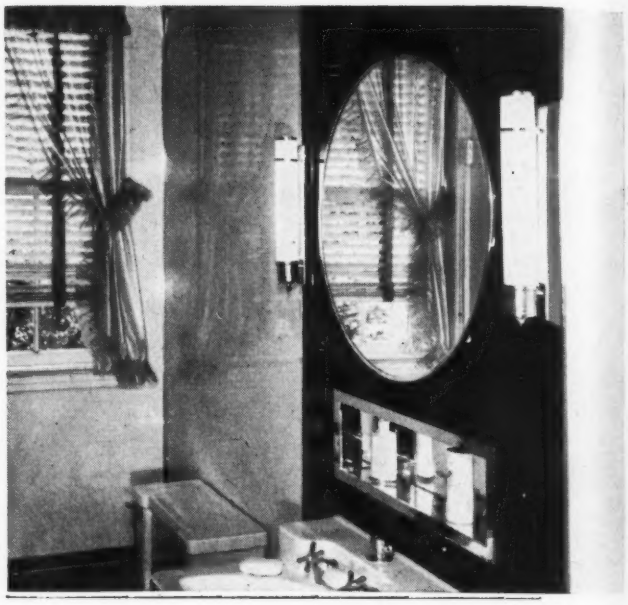
There is a great deal of history and tradition wrapped up in the art of making forged iron hardware. The products of earlier days, because of their charm and utility, are still in great demand today; not only to carry out the architectural scheme of a particular home, but for much wider usage on garden and fence gates, garage doors, etc.

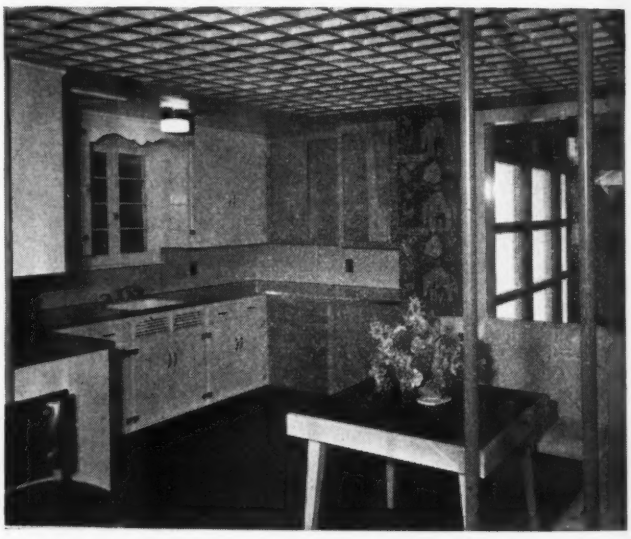
Most of the designs can be classified in four main groups: (1) Arrowhead, (2) Heart, (3) Bean, and (4) Tulip. Each of the four has a wide latitude of design.

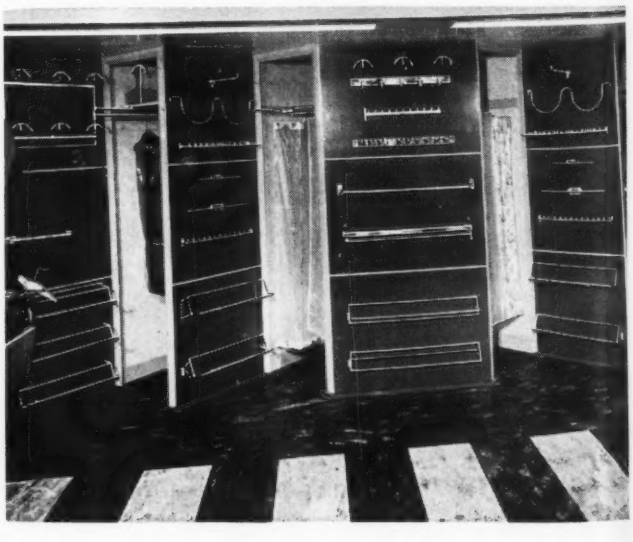
The actual mechanics of these fitments were adapted to the construction details of the particular period during which they were developed. Many hinges were of the pintle and strap type. Mortise applications were not too practical in earlier days, and consequently present day forged iron hardware rarely is of this type.

Latches too were of unique and ingenious design, and a wide variety has survived time to be copied authentically by present day manufacturers.

Modern production methods have made it possible to add the distinctive touch of genuine forged iron hard-





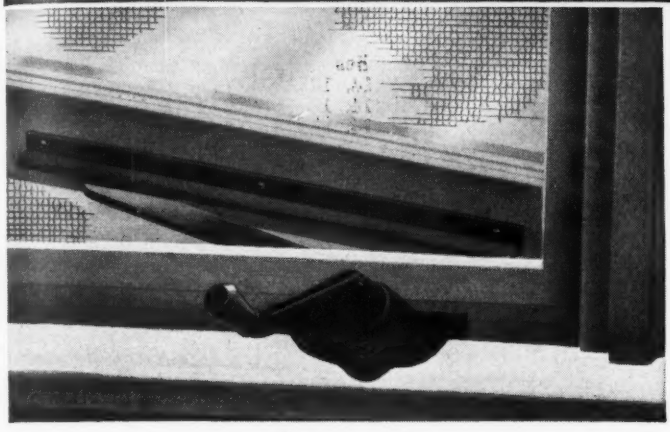


THERE is no better way to demonstrate hardware items than by putting them in a setting approximately the same as they will appear in service. Thus, the customer can see how they will appear in his own home.

Look At All Three!

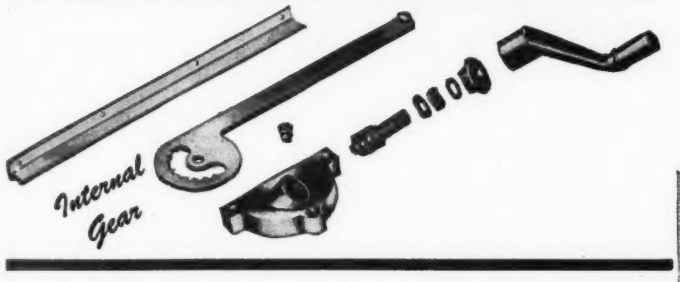
GETTY

UNDERSCREEN CASEMENT OPERATORS



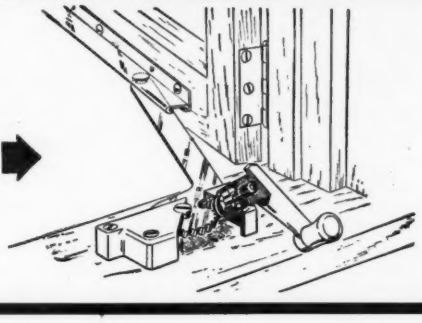
NO. 4703-W precision-built operator with exclusive *Internal Gear* construction, the strongest known in gearing. The low, graceful contour and fine finish bespeak the quality in both its design and construction. Preferred by leading architects everywhere.

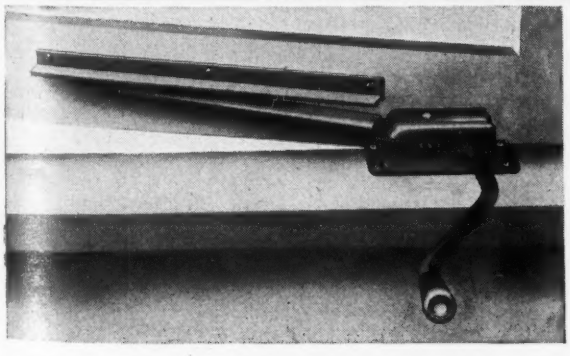
THE QUALITY YOU CAN'T SEE . . . is inside. All moving parts are fabricated to close tolerances and lubricated for life at the factory. Worm is case-hardened cold-rolled steel; *Internal Gear* is integral with operating arm. Teeth are wider and thicker for extra strength, and are accurately machined at the exact operating angle. Built for a lifetime of rugged, dependable service.



NO. 4715 The most popular low-cost operator. Takes up a minimum of sill space, and is sturdily and accurately constructed for years of quiet, efficient operation. All steel parts are heavily rust-proofed before lacquering. Compact in design and neat in appearance, it will stand up under rigorous usage.

CUT-AWAY VIEW shows the sturdy design of this angle-drive operator. The worm is cold-rolled steel, machine-cut and case-hardened. The gear teeth are of cold-rolled steel, hobbed, and are integral with the operating arm. Greatest strength is thus provided where the greatest strain occurs.





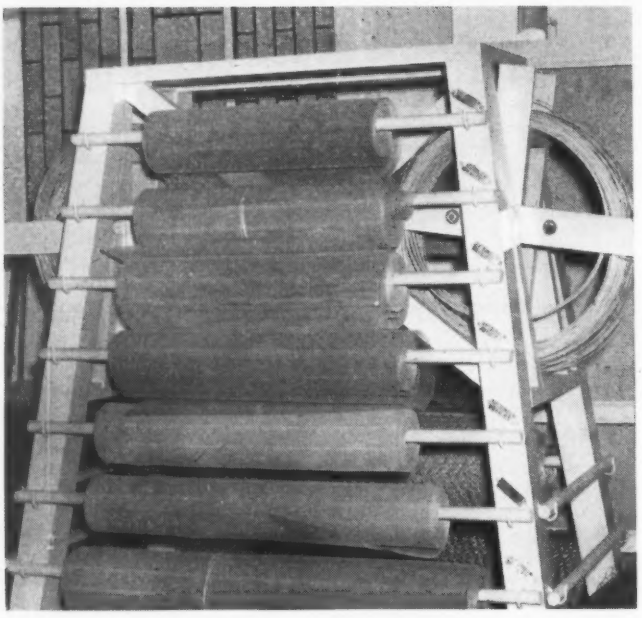
NO. 4700 features the heavy-duty worm-and-gear horizontal drive construction. This enables the operator to be used interchangeably on either right or left hand casement windows with *no change whatever!* Brass-plated handle fits snugly through an insect-proof escutcheon on the screen frame. As with all Getty operators, the casement may be opened or closed without disturbing the screen. May be used for awning-type windows also.

Getty manufactures operators and fasteners for all types of casements, both wood and metal. Also a complete line of butt hinges and other quality accessory hardware for casement windows. Write for Catalog E.

see our CATALOG in SWEET'S FILE

H. S. GETTY & COMPANY, INC.

3348 N. 10th Street, Philadelphia 40, Pa.



SCREENING of all types is a popular item with dealers, particularly in the spring. The above display and service rack keeps the screen stock handy and neat.

ware about the home at a surprisingly moderate cost. All pieces necessary for the complete trim of a home are available in several authentic designs.

Forged iron will blend properly with any of the following types of architecture: Cape Cod, New England, Southern and Dutch Colonial, American Farm, English, including Tudor and Cotswald, Mediterranean, and French. It is also ideally suited for American Ranch type homes.

Any idea that forged iron is limited to naturally finished wood is incorrect. It is a matter of historical record that even in George Washington's time most forged iron hardware was applied to painted surfaces.

Manufacturers of these products, too, have developed attractive display panels, and due to the natural beauty and appeal of the products themselves, these are powerful sales getters in the dealer's store, particularly with those customers whose tastes lead them to want the distinctive and authentic in any period reproduction.

SCREENING

Insect screening needs no particular introduction to lumber and building products dealers. Flies are prevalent everywhere, from the first warm days of spring to late fall. And mosquitoes, too, are common to every section of the country.

To say that every door and window in every dwelling should be screened, during warm weather, points to but part of the entire market for this indispensable product. Open porches should be screened if they are to be fully used and enjoyed. Restaurants, soda shops, food handling and processing plants, hotel dining and sleeping rooms and institutions, such as hospitals, boarding schools and college dormitories and dining halls, should all be screened. Public health regulations require the use of insect screening in all farm milk rooms, dairies and milk processing plants. Some states have laws on their books requiring its use in a wide variety of public places.

Wherever there is a fly, or a mosquito, and a human being, there lies a market for insect screening.

Commercial Standards

In January, 1947, the U. S. Bureau of Standards, in collaboration with the insect wire screening manufacturing industry, promulgated a commercial standard for insect wire screening which carries the names of over five hundred direct acceptors. In the course of time, it is expected, this standard will be accepted and relied upon as a dependable guide to economical buying by the thousands upon thousands of wholesale and retail outlets for building products and hardware supplies. This document bears the title: Commercial Standard for Insect Wire Screening, CS 138-47. Printed copies may be obtained from any insect wire screening manufacturer and most of their jobbing outlets, or from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. If ordered direct from the government the cost is 5c per copy. Manufacturers and jobbers are supplying them free of charge.

The salient features of this new commercial standard embrace:

Standard Types and Sizes

Metal	Meshes	Dia. of Wire	Finish
Steel	16x16, 18x14, 18x18	.011″	Galvanized
Com. Bronze	16x16, 18x14, 18x18	.011″	Brt. and Antique
Copper	16x16, 18x14, 18x18	.011″	Brt. and Antique

Standard Widths and Lengths

24″ 26″ 28″ 30″ 32″ 36″ 42″ 48″

All in 100 linear foot rolls.

Special Widths

Most manufacturers, if quantities are sufficient to warrant special production, will supply practically any width up to a maximum of 48″, but for prompt service and economy, it is recommended that standard widths be ordered wherever possible.

Special Meshes

Mesh sizes other than standard can also be made to special order, but there is no apparent justification for ordering anything coarser than 16x16 or 18x14 mesh. A recent series of exhaustive tests conducted by two eminent university laboratories has conclusively demonstrated that the old-time 12x12 and 14x14 mesh sizes are wholly inadequate as a protection against mosquitoes. In southern sections of the country these same tests showed nothing coarser than 18x18 mesh will bar out the small but extremely vicious yellow-fever mosquito.

18x14 and 16x16 meshes are on a par so far as protective efficiencies are concerned. The laboratory tests with live mosquitoes above referred to demonstrated that one was just as effective as the other under like conditions. However, 18x14 mesh should never be regarded as the equal of 18x18 mesh. Every square inch of 18x14 mesh has 252 openings, while 18x18 mesh is so much finer that one square inch contains 324 openings. This should give a good demonstration of how much smaller are the openings in 18x18 mesh.

Steel, Bronze, Copper

Steel wire screening, when properly cared for, will give long and satisfactory service in areas removed from the sea-coast, and in localities where the atmosphere is usually dry and free from corrosive gases inimical to other ordinary steel building products such as galvanized iron leaders and gutters, flashings, etc.

Commercial bronze wire screening is recommended for coastal areas and wherever there is excessive moisture in the air.

Commercially pure copper wire screening under extreme salt-air conditions might have a slightly longer life than bronze, but bronze is by far the more popular type. Pure copper wire screening, due to the inherent physical characteristics of the metal, is somewhat softer and has a little less spring and rigidity than bronze.

For any additional information about insect wire screening write to the Insect Wire Screening bureau, 74 Trinity place, New York 6, N. Y.

Plastic Screening

A comparatively new plastic material is now available for insect screening having several distinctive features.

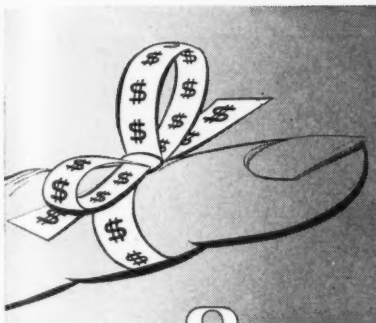
Plastic screening is used for screening windows, doors and porches on residential homes, summer residences and industrial buildings.

To apply simply fold cut edges under about half an inch, stretch tight and tack every two or three inches through the double thickness. Replace and tack moulding.

Pastic screening comes in 100 lineal feet rolls and widths in even inches: 24″, 26″, 28″, 30″, 32″, 36″, 42″, and 48″. Approximate weight per 100 square feet: 5½ lbs.

TOOLS

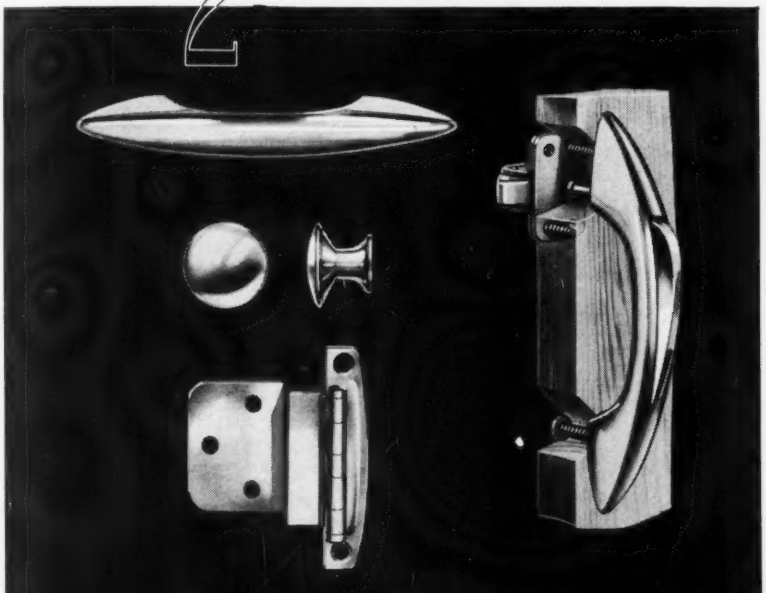
Power and hand tools are usually considered as a part of the general group of hardware materials. The development of these items in importance to the building material dealer, and the specific problem of sale, inventory, and display that are characteristic to them, made it advisable to include a separate Tool section in this book. For complete data on power and hand tools, See Section 6.



A PROFITABLE REMINDER

FROM NATIONAL LOCK

2 FAST-MOVING LINES FOR SPRING SELLING

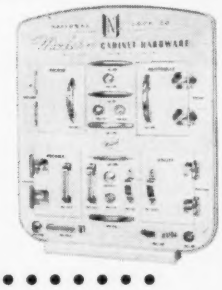


Chromium Plated

CABINET HARDWARE

Get it NOW! Get it from your jobber. Feature this distinctively-styled, Deluxe cabinet hardware that will breathe new life into any kitchen. It will sell FAST. . . at an excellent profit to you.

- *Envelope Packaged*
- *Free Counter Display Boards*
- *Four Matched Sets*
- *Order from Open Stock if Desired*



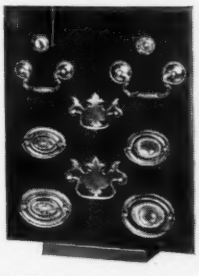
ORDER FROM YOUR JOBBER

Authentic

PERIOD FURNITURE TRIM

Authentically correct, traditionally faithful furniture trim, ideal for use on furniture, old or new. French Gilt and Antique English finishes. Easy to apply. A popular, profitable item. Get it now.

- *Envelope Packaged*
- *Free Counter Display Board*
- *Consists of only 10 Items*



DISTINCTIVE HARDWARE ALL FROM 1 SOURCE

NATIONAL LOCK COMPANY

ROCKFORD • ILLINOIS

MERCHANT SALES DIVISION

NAILS, SCREWS, BOLTS

Most dealers have long carried a service line of nails, screws, stove and carriage bolts, etc., for the convenience of their customers. Few items of merchandise that the dealer carries are of as great importance to construction and maintenance as these; yet they are not items that adapt themselves to merchandising methods as do most of the materials handled.

The major problem with the dealer is for the provision of adequate and efficient storage of these items, so the customer can be promptly supplied when he requests them. Before the war there was a marked trend toward "packaged nails," whereby boxes or sacks containing one, three, and five pounds of nails would be pre-packaged and arranged on an island display or wall shelf in the store.

Due to the importance of nails to the building material dealer, and the most unlimited use to which they are put, the succeeding pages include some much used formula to help in recommending the proper type and size for most of the common applications.

LADDERS

Selection of the right ladder for the job is of great importance to the ultimate user of the ladder, as well as to the dealer or jobber whose desire it is to furnish a ladder to the satisfaction of the customer. Specifications are important, and should conform to the standards of the American Ladder institute and the various state codes, as well as the Federal code. Beyond the specifications, the extremely vital factor of material used is of tremendous importance.

For industrial, mill supply, painters, mechanics, electricians, window cleaners, etc., manufacturers offer equipment designed for their use, built to stand up under the stress and strain of daily work.

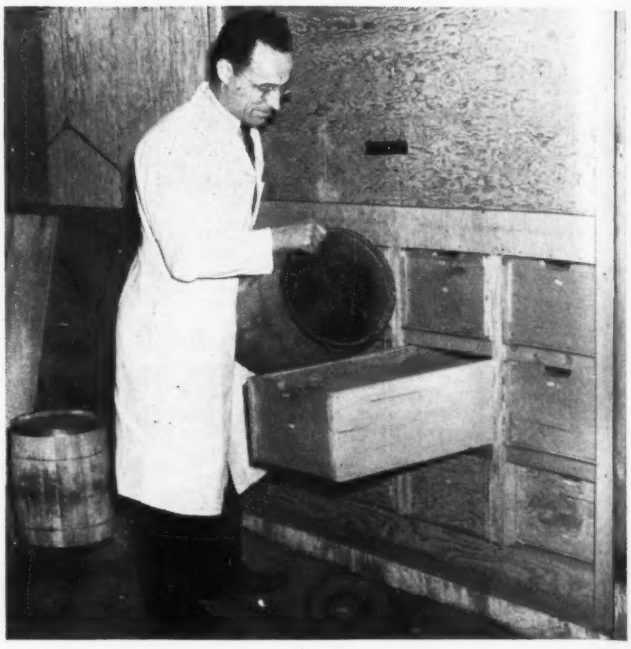
The ladder manufacturers urge the selection of the proper ladder for the use intended. They offer wide experience to lumber yards in their desire to help the customer select ladders for the use intended, thereby reducing replacement costs, giving satisfaction to the customer, and reflecting confidence on his dealer.

A complete ladder line includes:

- Combination
- Electricians
- Industrial
- Masons' ladders
- Mill supply
- Sectional
- Shelf
- Stock room
- Trestle
- Window cleaners
- Step ladders
  - Braced-back
  - Electric
  - Heavy platform
  - Mechanics
  - Paperhangers'
  - Platform
  - Safety
  - Standard platform
  - Swingup
  - Truss
- Single ladders
  - Closed top
  - Mechanics
  - Spread bottom
  - Taper
- Extension ladders
  - Awning
  - Closed top fruit
  - Eastern
  - General purpose
  - Mechanics
  - Painters trestle
  - Trestle
  - Western
- Stages
  - Extension planks
  - Masons' staging
  - Painters' staging
- Ladder equipment
  - Hooks
  - Lodis
  - Shoes
  - Spurs

Miscellaneous items consumers look for in a dealer's hardware department:

- Abrasive papers
- Adhesives
- Ash cans
- Automatic tackers
- Awning hardware & pulleys
- Babitt metal
- Barometers
- Bell traps
- Brooms
- Calcium chloride
- Carpenter squares
- Chamois
- Chimes
- Chimney thimbles
- Clothes line
- Glues
- Hobby tools
- House numbers
- Ice tongs
- Insect traps
- Kerosene stoves
- Lamps
- Lanterns
- Mail boxes
- Metal building corners
- Mitre boxes
- Mops
- Mouse and rat traps
- Nail boxes
- Package receivers
- Picture hooks
- Roofing cleats
- Rubbish burners
- Rubber mats
- Rust preventatives
- Sand paper
- Sash pulleys & weights
- Screen patches
- Scoops
- Screen & storm hangers
- Shoe racks
- Shovels
- Stops, screen door
- Unpainted furniture
- Ventilating locks
- Water filters
- Wire and fencing



MANY types of nail bins have been developed by dealers trying to improve handling and storage of these items. The above is a drawer type bin that holds a keg of nails in each drawer.

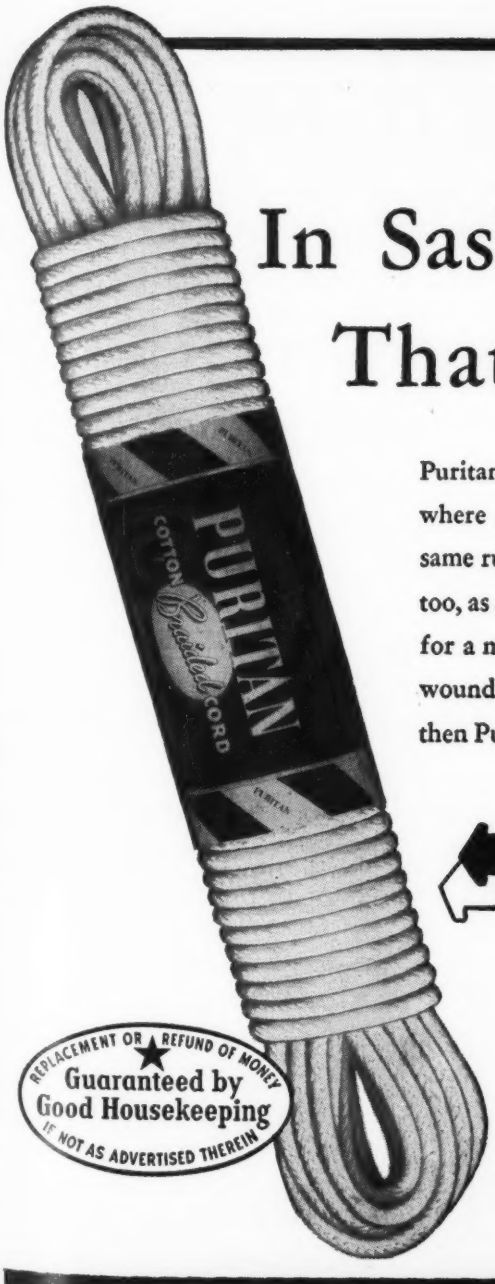
STOCK CONTROL

The retail dealer is interested in earning the maximum profit possible to his business within the limitations of his investment. He is, therefore, immediately concerned with maintaining the most active inventory. To achieve this objective, his builders' hardware stock should be organized in relation to the activity in the market in which the dealer is operating. Surveys have shown that the average dealer sells the hardware for more than 40 houses a year. For the average, then, the ideal stock of builders' hardware—carried in the hardware store within the store—should consist of at least one-fifth of the yearly gross. This means that the best stock of builders' hardware should be sufficient at all times to supply the hardware needs of eight houses.

With a turnover of at least five times a year, it can be assumed that the builders' finishing hardware department will be profitable. Therefore, an intelligent system of checks and balances should be employed by the dealer to control his stock so that turnover can be constantly checked. If turnover isn't rapid enough, the control system used should indicate it immediately.

Stock control, like other broad aspects of modern merchandising can be systematic and expert. The retail dealer should have a stock control system that will permit him to replace, periodically, slow-moving items with fast-moving items. He should be able, through a stock control system, to alter his basic stock in terms of changing fashions and changing market conditions. Stock control is the dealer's check on turnover. Through it he can insure an active inventory; without it he is a victim of chance and speculation.

MY CUSTOMERS WANT QUALITY... AND I WANT SALES...

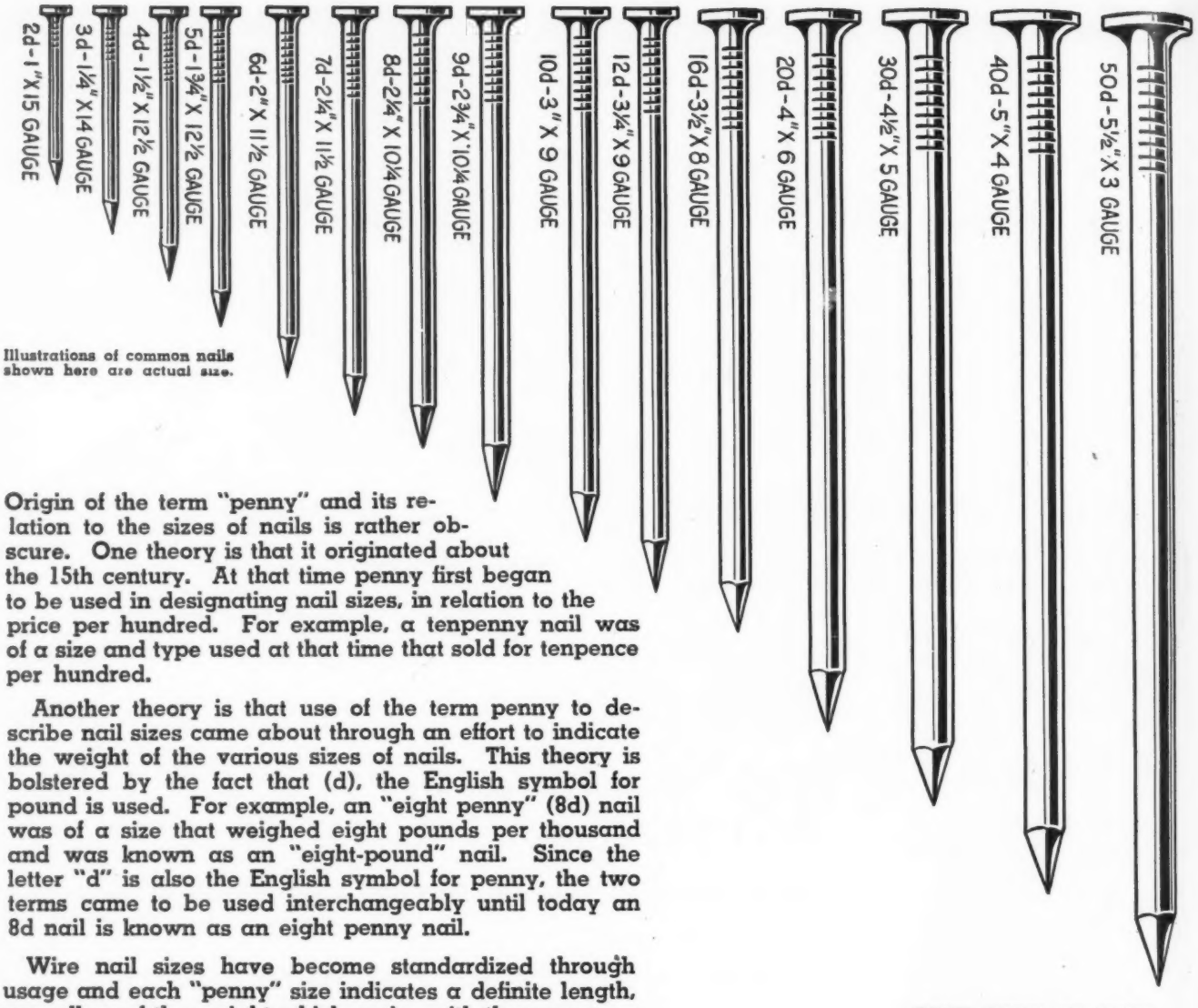


In Sash Cord That Means PURITAN

Puritan high quality never varies through the years. That's why dealers everywhere are glad to recommend this dependable cord for scores of uses. The same rugged strength that makes Puritan tops as a sash cord makes it perfect, too, as a tent rope, well rope, plow line, a trellis for vines, a kid's swing . . . yes, for a myriad of uses. Puritan quality starts from long staple cotton yarns . . . wound into the tightest, toughest braid that modern machinery can achieve; then Puritan is glazed and waterproofed for a long life of service out-of-doors.

Write for additional literature and sales helps on the complete Puritan line. Puritan Cordage Mills, Inc. (manufacturers), Louisville 6, Ky.

Stock Puritan — sell Puritan. You'll make staunch friends.

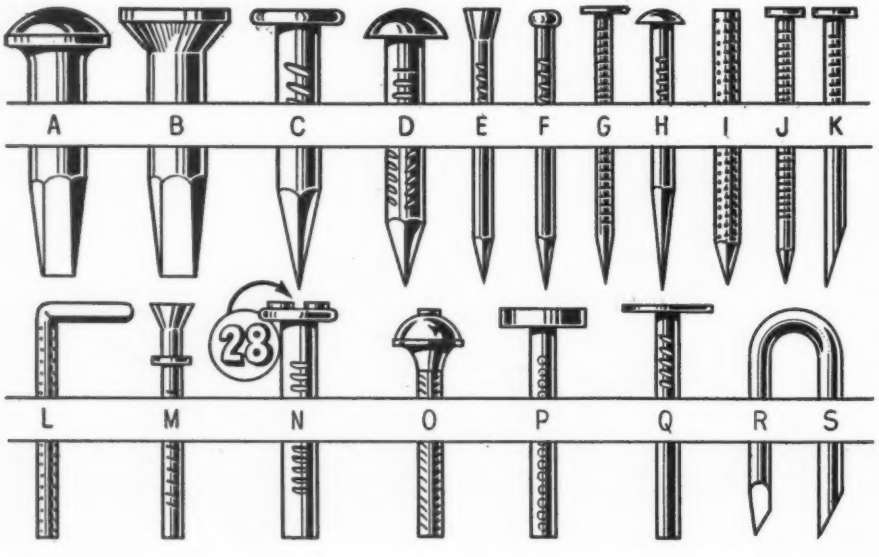


Illustrations of common nails shown here are actual size.

Origin of the term "penny" and its relation to the sizes of nails is rather obscure. One theory is that it originated about the 15th century. At that time penny first began to be used in designating nail sizes, in relation to the price per hundred. For example, a tenpenny nail was of a size and type used at that time that sold for tenpence per hundred.

Another theory is that use of the term penny to describe nail sizes came about through an effort to indicate the weight of the various sizes of nails. This theory is bolstered by the fact that (d), the English symbol for pound is used. For example, an "eight penny" (8d) nail was of a size that weighed eight pounds per thousand and was known as an "eight-pound" nail. Since the letter "d" is also the English symbol for penny, the two terms came to be used interchangeably until today an 8d nail is known as an eight penny nail.

Wire nail sizes have become standardized through usage and each "penny" size indicates a definite length, regardless of the weight which varies with the gauge, or diameter, and type of head. The type of head is also variable for different types of nails. By trade custom the nominal length of all nails, except cement coated and those with countersunk heads, is measured from the under side of the head to the tip of the point. Cement coated and countersunk nails are measured over their entire length, including the head.



SOME TYPES OF NAILS

(At Left)

A—Oval head, chisel point.

B—Flat head countersunk, chisel point.

C—Flat head, diamond point.

D—Round head, diamond point.

E—Countersunk head, diamond point. Used for casing and flooring.

F—Brad head, diamond point. Finishing nails.

G—Flat head, needle point.

H—Oval head, duck bill point.

I—Barbed dowel pin.

J—Flat head, diamond point.

K—Flat head, side point.

L—Metal lath nail.

M—Double head, countersunk.

N—Tie and pole markers.

O—Lead head.

P—Lead head.

Q—Large flat head.

R-S—Fence staple.

You're bound to profit with a sales idea like this

RUSSWIN EASY--- 4

SIMPLIFIED HARDWARE

Just 4 Mortise Locks
and 4 Tubular Locks

to handle every residential job that comes along . . . takes all the misunderstanding and confusion out of builders' hardware.

Get both these books from your Russwin Jobber

and a merchandising plan like this . . .

- A new, simplified numbering system that's easy to understand. No guesswork, no mistakes.
- Authentic, simple, attractive designs by Russwin craftsmen . . . a "right" pattern for any type of house.
- New, illustrated Bar Labeling shows at a glance what's in a box, its metal and finish. Space for pricing.
- Handsome permanent wood display unit puts hardware out in front, where customers can see . . . and buy.
- New Russwin Easy 4 Simplified Hardware Catalog makes ordering easy. Anyone who can read can order this hardware correctly.

It will make money for any dealer

SEND COUPON FOR FULL DETAILS. Nothing you will ever sign may be so important to you.

RUSSWIN *dealers*

ALWAYS HAVE THE EDGE

(and now more than ever)

Russell & Erwin Division
The American Hardware Corp.
New Britain, Conn.

I'm interested. I would like to know the full story about Russwin Easy 4 Simplified Hardware.

Name.....

Address.....

.....

My Jobber is.....

Nail Quantity Table With Nailing Instructions

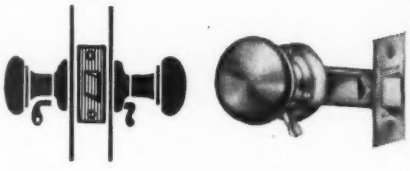
Size of Nails	Nails each Bearing	Length of Nail	Gauge	Nails per Lb.	Lbs. Required 1000 Bd. Ft. 24"c.	16"c.	12"c.	Lb.	Nailing Instructions
1x 4 Boards and Shiplap....8d Common	2	2½	10¼	106	30	48	60		
1x 6 Boards and Shiplap....8d Common	2	2½	10¼	106	20	32	40		
1x 8 Boards and Shiplap....8d Common	2	2½	10¼	106	16	26	31		
1x10 Boards and Shiplap....8d Common	2	2½	10¼	106	13	20	25		
1x12 Boards and Shiplap....8d Common	3	2½	10¼	106	16	24	31		
2x 4 Boards and Shiplap....20d Common	2	4	6	31	..	82	..		
2x 6 Boards and Shiplap....20d Common	2	4	6	31	..	55	..		
2x 8 Boards and Shiplap....20d Common	2	4	6	31	..	41	..		
2x10 Boards and Shiplap....20d Common	3	4	6	31	..	50	..		
2x12 Boards and Shiplap....20d Common	3	4	6	31	..	41	..		
Base .....8d Finish	2	2½	12½	189	..	..	..	1	Per 100 Lin. Ft.
Base Shoe									
Battens .....4d Finish	..	1½	15	584	..	..	..	½	Per 100 Lin. Ft.
Bridging .....8d Common	..	2½	10¼	106	.9	1.2	1.5	4	Nails each piece
Ceiling ½ or ⅝x4.....6d Finish	1	2	13	309	6	8	11		
Ceiling ¾x4 .....8d Finish	1	2½	12½	189	9	14	18		
Corner Boards—Cornice									
Fascia 1x4 .....8d Box	..	..		..	..	..	..	1.5	Per 100 Lin. Ft.
Frieze 1x8 .....8d Box	..	..	..	..	..	..	..	2.2	Per 100 Lin. Ft.
Plancher 1x10 and 1x12....8d Box	..	..	..	..	..	..	..	2.5	Per 100 Lin. Ft.
Verge Board 1x6.....8d Box	..	..	..	..	..	..	..	2.0	Per 100 Lin. Ft.
Bed Moulding .....6d Casing	..	..	..	..	..	..	..	.5	Per 100 Lin. Ft.
Crown Moulding .....6d Casing	..	..	..	..	..	..	..	.8	Per 100 Lin. Ft.
Finish ⅞ Inch .....8d Finish	2	2½	12½	189	13	12	25		
Finish 1¼ Inch.....10d Finish	2	3	11½	121	6	10	12		
Flooring 1x3 Soft Wood.....8d Casing	1	2½	11½	145	21	32	42		
1x4 Soft Wood .....8d Casing	1	2½	11½	145	16	24	30		
1x6 Soft Wood .....8d Common	1	2½	10¼	106	11	16	22		
⅜x1½ Hard Wood.....4d Casing	1	1½	14	473	..	10	13		Nail every 10 to 12"
⅝x2 Hard Wood.....4d Casing	1	1½	14	473	..	8	11		Nail every 10 to 12"
⅛x2¼ Hard Wood.....8d Casing	1	2½	11½	145	..	14	20		Nail every 14 to 16"
1x4 Refinished .....8d Casing	1	2½	11½	145	18	..	..		Nail every 14 to 16"
2x6 D & M.....	1	4	6	31	..	20	35		
⅛x1½ Hard Wood.....8d Casing	1	2½	11½	145	..	20	27		
Furring—									
1x2 on Brick Walls.....20d Common Cut Nails	..	..	..	..	..	..	..	5¼	Per 100 Lin. Ft.
Grounds									
Gypsum Products									
Gypsum Board ¼ Inch....4d Common	..	1⅜	14	488	..	..	..	4½	Nail 5 to 7" apart on ceiling
Gypsum Board ⅜ Inch....4d Common	..	1⅜	14	488	..	..	..	4½	Nail 6 to 8" apart on walls
Gypsum Board ½ Inch....6d Common	..	1⅝	13½	364	..	..	..	6	
Gypsum Board Wood Grain4d Common	..	1⅜	15	488	..	..	..	3	Use flathead nail under trim
Gypsum Board Wood Grain4d Common	..	1½	14	534	..	..	..	1½	Use finish nail in fielddrive at 45 degree angle
Tile Board .....4d Common	..	1⅜	14	488	..	..	..	4½	Nail same as sheetrock but nail in field not in groove
Framing 2x4 to 2x12.....20d Common	..	4	6	31	10	15	20		
16d Common	..	3½	8	49	6	8	10		
10d Common	..	3	9	69	4	6	8		
Girders—Built Up									
2x 6 .....16d Common	..	3½	8	49	..	..	..	2.0	Per 100 Lin. Ft. 30 pounds
2x 8 .....16d Common	..	3½	8	49	..	..	..	2.8	Per 100 Lin. Ft. Mixed 16d
2x10 .....16d Common	..	3½	8	49	..	..	..	3.5	Per 100 Lin. Ft. or/and 20d Com.
2x12 .....16d Common	..	3½	8	49	..	..	..	4.2	Per 100 Lin. Ft. Per M

GETTING YOUR SHARE OF BUILDERS' HARDWARE BUSINESS?

If you're not, then write for the new Lockwood Catalog No. 24. It will give you full information about these — and other — fast-moving items in the Lockwood Line . . . one of the most complete lines in the Builders' Hardware field for stock and contract use. Prompt shipments on most items.

Sectional Entrance Handle

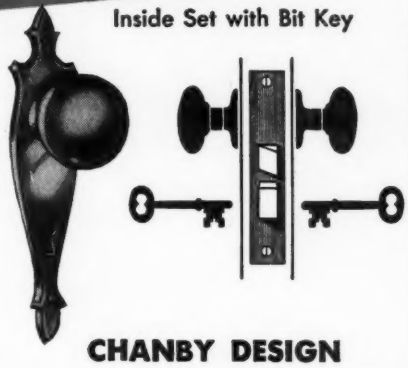
BARCLAY DESIGN



Tubular Inside Set for Bath or Bedroom

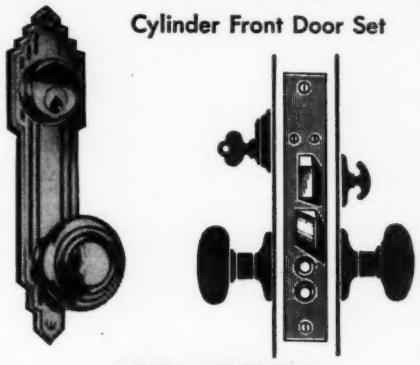
BEVERLY DESIGN

Inside Set with Bit Key

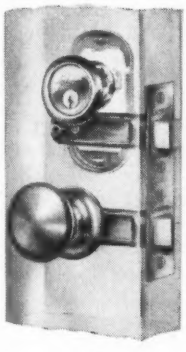


CHANBY DESIGN

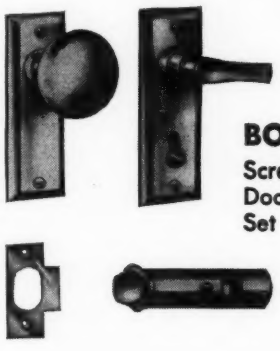
Cylinder Front Door Set



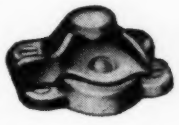
AZEX DESIGN



BOR-LOC*
Cylinder Combination Set



BOR-LOC
Screen Door Set



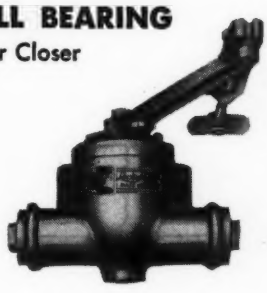
SASH FASTENER

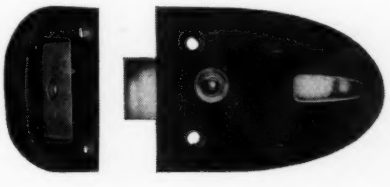
WALL-TYPE DOOR STOP

BAR SASH LIFT

SCREEN DOOR CLOSER

BALL BEARING
Door Closer





STREAMLATCH

*T. M. Reg. U. S. Pat. Off.

L-3X

Lockwood

HARDWARE MANUFACTURING COMPANY

DIVISION OF INDEPENDENT LOCK COMPANY • FITCHBURG, MASSACHUSETTS

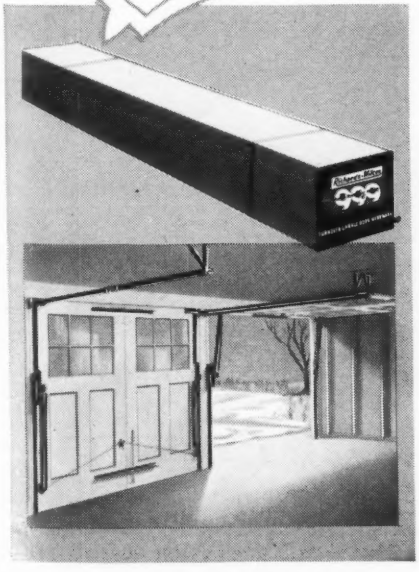
	Size of Nails	Nails each Bearing	Length of Nail	Gauge	Nails per Lb.	24"c. 1000 Bd. Ft.	16"c. Lbs. Required	12"c.	Lb.	Nailing Instructions
Insulating Board										
½ Inch Building Board	4d Common	..	1½	12½	316	..	..	..		Exposed nailing No. 17 1¼ wire nail Concealed nailing 4d Com. or Box
1 Inch Building Board	8d Common	..	2½	10¼	106	..	..	..		Exposed nailing No. 17 2" Concealed nailing 8d Com. Nail above edges 3" oc—⅜" from edges or edge Intermediate 6" apart
Bevel Plank	4d Box	..	1¼	..	..	..	..	..		12" oc.
Joist Flooring and Ceiling										
2x 6 and 2x 8	16d Common	..	3½	8	49	13	18	22		
2x10 and 2x12	16d Common	..	3½	8	49	14	15	16		
Lath										
½ Inch Insulating Board Plaster Board		..	1⅜	13	448	..	..	..	10	4d Box or 6d box may be used. Nail ⅜" from edge 4" oc 20 nails per lath ½" from shiplapped edges
1 Inch Insulating Board Plaster Board		..	1¾	13	291	..	..	..		6" apart on all supports
Metal Lath	7/8 Head Roofing Nail	..	2	10½	126	..	..	..	17½	Drive nails well in and bend to engage at least 2 strands of lath
Gypsum Lath	Plaster Board	5	1⅜	13	419	..	..	..	9	Nail 4" apart—5 nails per stud
Wood Lath	3d Fine	1	1⅜	15	778	..	..	..	7	Per 100 Lath
Plywood ¼ Inch	4d Common	..	1½	12½	316	6	9	12		
5/16 Inch	6d Common*	..	2	11½	181	..	..	..		
⅜ Inch	6d Common*	..	2	11½	181	..	..	..		
½ Inch	7d Common*	..	2¼	11½	161	8	12	16		
5/8 Inch	8d Common*	..	2½	10¼	106	..	..	..		
¾ Inch	10d Common*	..	3	9	69	14	21	28		

When nailing ¼ inch Plywood it will require about 5 pounds per 1000 square feet of 4d finish nails or 9 pounds of 4 inch flat head nails where battens are not used; and about 4½ pounds of 4d flat head nails together with 3 pounds of 4d finish nails where battens are used to cover joints spaced 4 feet 0 inches apart.
*Preferably cement coated nails.

Roofing										
Metal Roll Roofing	Coldwar Rfg. Nail	..	1½	..	..	..	..	..		Reroofing over wood shingles
Shingles—Roof										
Asbestos (New Work)	Rfg. Nail	..	1¼	10	170	..	..	..	1½	Per Square American Colonial No. 607—4 nails per shingle
Asbestos (Old Work)	Rfg. Nail	..	2	10	110	..	..	..	2½	Per Square American Colonial No. 607—4 nails per shingle
Asphalt (New Work)	Rfg. Nail	..	1	10	190	..	..	..	6	Per square for Thickbutts
Asphalt (Old Work)	Rfg. Nail	..	1¾	10	130	..	..	..		
Wood (New Work)	3d Gal.	..	1¼	13	429	..	..	..	4½	
Wood (Old Work)	Rfg. Nail	..	2	10	110	..	..	..		
Sheathing										
½ Inch Vapor Seal	6d Common	..	2	11½	181	..	..	..	1½"	Roofing Nails ⅜" heads may be used on ½"
¾ Inch Vapor Seal	8d Common	..	2½	10¼	106	..	..	..	1¾"	Roofing Nails ⅜" heads may be used on ¾" nail edges 3" apart ⅜" from edge —Intermediate nailing 6" apart.
Siding-Bevel										
½x 4	6d Box	1	2	12½	236	..	18	23		
½x 6	6d Box	1	2	12½	236	..	15	15		
½x 8	6d Box	1	2	12½	236	..	10	12		
¾x10	7d Box	2	2¼	12½	210	..	35	45		
¾x12	7d Box	3	2¼	12½	210	..	50	60		
Siding Drop										
1x4	7d Box	2	2¼	12½	210	22	35	45		
1x6	7d Box	2	2¼	12½	210	15	23	30		

SWINGING DOORS ARE "OUT"

For garage doors that give trouble-free service . . . specify RICHARDS-WILCOX 999 Garage Door Hardware



For many years, leading architects and builders have agreed that Richards-Wilcox Door Hardware is the world's finest. Now, with the new line of R-W 999 Garage Door Hardware, out-dated, troublesome swinging garage doors can be converted quickly and easily into the modern, overhead type.

Overhead garage doors hung with R-W 999 Hardware are weathertight, the easiest to operate, and they "stay put." And R-W 999 Hardware comes *complete*—in one convenient kit—with everything needed for installation and operation.

For further information, simply call or write the nearest Richards-Wilcox office. Ask for free folder with complete facts about R-W 999 Hardware—your surest cure for garage door grief.

1880 RICHARDS WILCOX R-W AURORA TRADE MARK Reg. U. S. Pat. Off. 1949

OVER 69 YEARS

Richards-Wilcox Mfg. Co.

"A HANGER FOR ANY DOOR THAT SLIDES"

AURORA, ILLINOIS, U.S.A.

Branches: New York Chicago Boston Philadelphia Cleveland Cincinnati Washington, D. C. Indianapolis St. Louis New Orleans Des Moines Minneapolis Kansas City Los Angeles San Francisco Denver Seattle Detroit Atlanta Pittsburgh

Sales Aids

Sales aids help clinch the sale at the point of purchase. Because it is true that builders' finishing hardware follows the same sales process as is involved in the retail selling of other staple products (impulse buying and the inducement to buy related items), the items carried in the hardware store within the store should be sampled on displays and merchandisers so that impulses to buy can be stimulated, and so that customers may have the opportunity of making selections without the assistance of a sales clerk.

Wherever possible, products should be so displayed that they can be demonstrated by a sales clerk in actual operation or tried by the customer. It is a good rule of retailing to let the customer see and feel the goods.

Islands in the store, accessible to store traffic, containing well-displayed, priced goods should be utilized. These are good attention-getters and help impulse buying.

Customer Relations

With respect to builders' hardware, the dealer should have available for his customers helpful guides to the types of hardware suitable for different kinds of architecture and for different needs. By use of a complete hardware specification check-list, customers can select preferred patterns and finishes, and the best types of hardware for all parts of the home.

It is good customer relations to sell the best quality goods within the budget allowance. In regards builders' hardware, for example, the best quality goods are in the long run the least expensive. They are sturdy, durable, well-made, well-finished—the best, in fact, to support all the moving parts of a house.

Value of Brand Name Products

In builders' hardware, as in other lines of products, many advantages accrue to the dealer if he carries well-known, nationally-advertised brand-name products. Among these advantages are the following:

Well-known brand-name manufacturers have a large investment in the reputation and integrity of their brands. To preserve them, they constantly seek to improve product quality. This progress is passed on to customers. It is a source of customer satisfaction.

Well-known brand-name manufacturers spend large sums of money advertising and publicizing their brands. Their brands are familiar, and it is easier to sell familiar brands than unknown brands. In fact, the dealer who stocks nationally-advertised brand-name goods is a direct beneficiary of the accumulated advertising, publicity and good will built up for these brands.

Well-known brand-name manufacturers go to a lot of trouble creating point-of-sales aids, displays, merchandisers and other promotion materials for retailers to accelerate brand-name sales. This helps consumer movement of goods.

Merchandising Hints

Merchandising is a broad term covering a vast field of activity designed to hasten the consumer movement of goods and expand sales volume. The alert dealer is the one who applies imagination to selling, who utilizes available promotion resources, and who recognizes that his establishment is not just a repository of goods but a wide-awake sales agency.

Here are some builders' hardware merchandising hints that should be helpful:

(a) Direct Mail. The retail dealer should procure from his distributor or directly from a manufacturer envelope stuffers and heralds that can be sent to customers advertising some item carried. This is a cheap and practical way of customer communication. Stuffers should be put in envelopes containing bills and statements.

(b) Packaging. A good, modern package is a "silent salesman." Today, manufacturers of builders' hardware are boxing their products in gay, colorful cartons that make hardware selling easy. These boxes show product pictures, carry sales legends, stimulate impulse buying and advertise related items. They help brighten up the retail establishment.

(c) Catalogues. Because the modern lumber dealer sells a wide variety of products, up-to-date pictorial catalogues help make sales. For builders' hardware for example, the dealer should get from his distributor a modern, stock catalogue that contains all the items in his stock inventory and the items warehoused by the distributor.

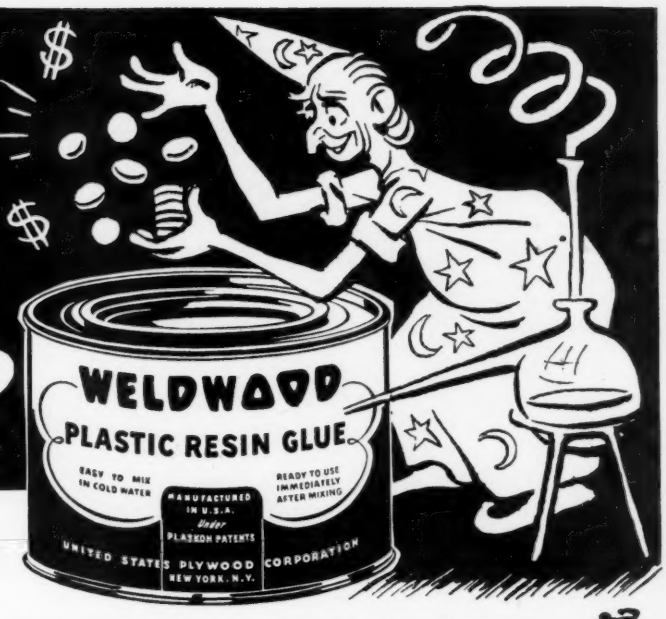
(d) Random Items. If floor space is available, dealers should place impulse-bought items on tables or islands for the quick, small, "unexpected" sale. Little sales in which the customer "sells himself" do not cost anything to make. Yet they add to the annual gross. This type of five-and-ten-cent store activity has been tried with great success by some dealers.

(e) Seasonal Window and Counter Displays. Dealers should take advantage of seasonal demands. Window and counter displays should be set up to promote seasonal items at the right time. Early spring is a good time, for example, to display screen door closers; early fall a good time to show storm door catches.

(f) Advertising. Advertising in local newspapers is a powerful sales aid. Illustrations for ads can be gotten from brand-name manufacturers in mat form without cost. The advertisements can be set up for the dealers by the local newspapers.

	Size of Nails	Nails each Bearing	Length of Nail	Gauge	Nails per Lb.	Lbs. Required 1000 Bd. Ft. 24"c.	16"c.	12"c.	Lb.	Nailing Instructions
Siding										
Wood Shingle Exp. 6 Inch.	3d Gal.	..	..	..	..	..	..	..	4	Per Square
Wood Shingle Exp. 7½ In.	3d Gal.	..	..	..	..	..	..	..	3	Per Square
Asbestos Side Wall										
New Work	Gal. Rfg. Nail	..	1¼	..	..	..	..	..	1	Per Square (Face nails Inc with shg.)
Old Work		..	2	..	..	..	..	..	1½	Per Square (Face nails Inc. with shgs.)
Insulated Brick										
Studding										
2x4 Mixed	16d Common	..	3½	8	49	..	..	..	15	Per 1000 Bd. Ft.
2x6 Mixed	8d Common	..	2½	10¼	106	..	..	..	15	Per 1000 Bd. Ft.
Trim—Side of Door and	4d Finish	..	1½	15	584	..	..	..	½	Per Side of Trim
Window	6d Finish	..	2	13	309	..	..	..	½	Per Side of Trim
	8d Finish	..	2½	12½	189	..	..	..	½	Per Side of Trim
Wall Board ⅜	3d Common	..	1¼	14	568	..	..	..	5	Per 1000 Sq. Ft.
¼ Inch	4d Common	..	1½	12½	316	..	..	..	9	Per 1000 Sq. Ft.
⅜ Inch	4d Common	..	1½	12½	316	..	..	..	9	Per 1000 Sq. Ft.
Miscellaneous										
Celo—Siding	8d Common	..	..	..	..	..	..	..		4½" oc intermediate nailing and edge supports ⅜" from edge
⅛ Inch Flexboard	No. 1x1 Button Head Drive Screw Nails	..	..	..	..	..	..	..		
⅛ Inch Flexboard	Same as above	..	..	..	..	..	..	..		

WANT TO TURN GLUE INTO GOLD?


WELDWOOD
PLASTIC RESIN GLUE
EASY TO MIX IN COLD WATER
MANUFACTURED IN U.S.A. Under PLASKON PATENTS
READY TO USE IMMEDIATELY AFTER MIXING
UNITED STATES PLYWOOD CORPORATION
NEW YORK, N.Y.

WELDWOOD Gives You That Midas Touch!

Yes Weldwood Glue can work sales magic for you. It is a favorite both with professional and amateur woodworkers and enjoys wide sale. It is a one-part powder which mixes easily with cold water, then being ready for instant use. It joins wood to wood and other porous materials in a permanent bond which is unaffected by moisture, bacteria, fungus or mold; since it does not stain, it can be used for the finest woods.

Available in small cans for over-the-counter sale as well as large drums for industrial use. Dealer helps: Counter circulars, Counter displays are available. Convenient stocks are carried at our warehouses located in all principal cities.

UNITED STATES PLYWOOD CORP.
Industrial Adhesives Division, Dept. 443
55 W. 44th St., New York 18, N. Y.

Please send details of your special lumber dealer sales plan on Weldwood Glue.

.....

.....

.....

NOW · REDUCE YOUR UNIT COSTS!

with the-

ARROW Sash SNUBR

More profits for your sash department! Sensational new Arrow Sash Snubr fits in sash or frame, with or without weatherstrip. Works in wood or aluminum windows. Invisible when installed. Spring loaded roller holds sash snugly in frame, prevents rattle. Sash glides up, stays put, yet pushes down easily. Simple to install, the Snubr pays big dividends in time and labor savings. Retails at 40 cents. Liberal trade discounts. Write for details. Order trial dozen.

ARROW MFG. CO.

INDEPENDENCE, KANSAS — P.O. BOX 468

LUDWIG

SPRING-TENSION "SNAP" FASTENERS

Hold screens or storm sash FIRMLY to window frames or combination doors.

Eliminate rattling and drafts . . . cut fuel costs . . . save wear and tear on painted surfaces . . . permit quick and easy changing of storm sash and screens.

The LUDWIG SPRING-TENSION "SNAP" FASTENERS are a proven fast seller. Made of hardened spring steel and rust-proofed.

Packed 1 gross (with screws) in 7"x7"x2½" attractively colored display box with 1 Fastener mounted on demonstrator block. Weight 5 lbs. 12 display boxes to carton. Shipping weight 60 lbs.

DEALERS — Order from your regular Jobber.

SASH MANUFACTURERS — Write to factory for bulk prices.

LUDWIG MFG. CO., INC.
2401 Durand Road,
RACINE, WISCONSIN

Section 6

Power and Hand Tools

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THE RAPID INCREASE in the number of building products dealers who have added power and hand tools to the products they sell, clearly indicates that these items are logically grouped with building materials, and that the dealer who promotes their sale can develop a worthwhile volume of business from them.

A dealer who may question the correlation between tools and building products may draw a close parallel between them and builder's hardware. Not so many years ago, the greatest volume of builder's hardware was sold by hardware retailers. Now the bulk of the national volume moves through the building products dealer, due to the simple fact that hardware is a necessary accessory for doors, windows, etc. that are essential construction items. Today, over 90% of the building material dealers sell the hardware for their millwork, and the customer has the advantage of complete service at one spot.

The same is true of tools. Tools are used to fashion and work the materials handled by a material dealer. A customer buying building products is naturally thinking about the tools and equipment needed to install them at the same time. Thus, the tie-in is very close.

Many dealers, however, have not realized the full potential of this business because they have not treated it as a part of their promotional program, relying on the customer to ask for tool items instead of actively selling them by advertising and suggestive selling methods.

Department and chain stores throughout the country have demonstrated that a tremendous volume of business can be developed by good merchandising techniques, and dealers who have followed the same pattern, have enjoyed similar satisfactory results. Success should be doubly insured, as the building products dealer has the better opportunity to sell tools along with his products, than have the other types of retailers.

It is not difficult to survey the potential for the sale of tools. Every home owner, farmer, craftsman, and for that matter almost every man, has frequent occasion to use tools. Every home should have a kit of basic tools in order to take care of emergency maintenance and repair. Most of these are sadly lacking in adequacy.

In addition, the home workshop has become the fastest growing hobby in the country. It has been proved in the hobby field that an enthusiast will spare no expense to equip himself with all the items he needs to pursue a hobby.

All dealers of building materials work very closely with the craftsmen in their trading area, and can very easily develop the supply of their tool requirements. These, however, must be of the best quality in order to satisfy the demands of these men who earn their livelihood by their use.

TYPES OF TOOLS

Fundamentally, all types of tools may be classified as either power or hand tools, but when further divided by use, the definitions cannot be so general. More specifically, tools are grouped as follows:

Power Tools: Power tools are those which are driven by electric or other power, and may be either portable or stationary. Insofar as handling them for rental or resale, dealers are interested in bench, portable circular, and chain saws; stationary and portable drills; small band saws, shapers, and jointers; belt and portable sanders, etc.

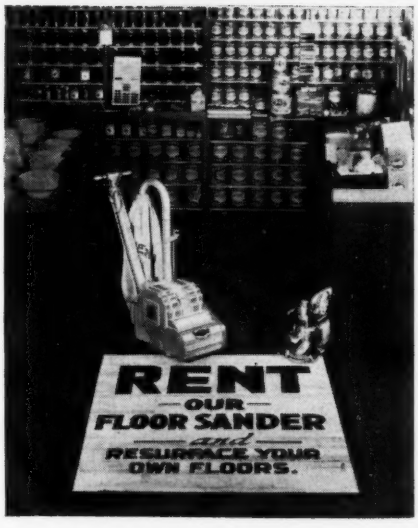
Hand Tools: In the broad field of hand tools there are primarily woodworking and machinists, although each craft has specially adapted tools, i.e. sheet metal working, plumbing, electrical, etc.

The building material dealer has more interest in the woodworking variety, although certain others have wide usage in home repair and maintenance and should be included in every well-stocked tool department. These are soldering irons, wrenches, hack saws, files, etc.

Special Purpose Tools: In addition to the above, there are certain special purpose tools for which there is great demand, and which should be considered in organizing a complete tool department. These are lawn and garden tools, (See Section 14), post hole diggers, wire stretchers, paint sprays, axes, sledges, masonry drills, grinders, etc.

For reference purposes a more complete listing of the various types of tools and accessories are listed below.

- Adzes
- Automatic tackers
- Axes
- Block, chain & tackle
- Blow torches
- Bricklayers chisel
- Bricklayers hammer
- Calipers
- Carpenters chalk
- Carpenters pencils
- Chains
  - Dog kennel
  - Halter
  - Heavy duty
  - Loading
  - Safety
  - Sash
  - Tow
- Chisels
  - Bricklayers
  - Butt
  - Pocket
  - Ripping
- Crayons
- Crowbars
- Files
  - Bastard
  - Knife blade
  - Knife sharpening
  - Mill
  - Taper
  - Utility
- Folding fules
- Floor sanders—(See Flooring Section)
- Glaziers tools—(See Glass Section)
  - Cutters
  - Putty knives
- Hammers
  - Bricklayers
  - Claw
  - Heavy service
  - Leather handled
  - Tack
- Handles
  - Axle
  - Hammer
  - Hatchet
  - Pick
- Hand drills
  - Drills sets
- Hatchets
- Insulation board cutters
- Insulation board bevelers
- Jacks
- Levels
  - Aluminum
  - Masons
  - Pocket
  - Steel
  - Torpedo
  - Wood
- Melting pots
- Metal shears
- Micrometers
- Miter Boxes
  - With saws
- Monkey wrenches
- Nail pullers
- Nail sets
- Planes
  - Block
  - Rabbet
  - Jack
- Pliers
  - Combination
  - Cutting
  - Flat nose
- Wrenches
  - Bull dog
  - Cutting
  - Grip
  - Linemans
  - Needle point
  - Slip nose
  - Wire cutting
- Plasters tools—(See Plastering Section
  - Aluminum floats
  - Eagle floats
  - Darbie
  - Hawks
  - Hods
  - Inside corner tools
  - Jointers
  - Outside corner tools
  - Walking trowels
  - Wide-face edgers
- Saws
  - Band
  - Buck
  - Buzz
  - Compass
  - Coping
  - Cordwood
  - Cross-cut
  - Cut-off
  - Dado
  - Hack
  - Hand
  - Hollow-ground
  - Jig
  - Keyhole
  - Rip
  - Two-man
  - Woodsmans
- Saw horses
- Saw tools
  - Gauge
  - Jointer
  - Vise
- Scoops
- Scrapers
- Screw drivers
  - Automatic
  - Cabinet
  - Heavy duty
  - Pistol grip
  - Screen holding
  - Spiral ratchet
  - Stub
- Sharpeners and sharpening tools
- Shovels
- Solder
- Squares
  - Calipers
  - Combination
  - Micrometers
  - Steel
  - Try
- Spades
- Steel tape
- Steel wool
- Stones
  - Axe
  - Grind
  - Oil
  - Pocket
  - Scythe
- Timber connectors
- Tool boxes
- Trowels
- Turnbuckle
- Vises
  - Bench
  - Hand
  - Woodworkers
- Wheelbarrows
- Wire ropes
  - Midget
  - Rachet
  - Pipe
  - Stillson



RENTAL tools can be effectively displayed both in the store and as special window displays. Above are two good examples.

TOOL RENTAL DEPARTMENT

Many dealers have entered the tool rental business, with most satisfactory results. Such equipment as floor sanders, paint sprays, and various other power tools make excellent rental items, and the profit from the service can be quite gratifying.

The market is with home owners, men who are amateur mechanics and like to do odd painting, redecorating and general maintenance work around their home. In addition, many carpenters and painters do not own their own equipment, preferring to rent it as the occasion arises.

Rental of Floor Sanding Machines:

Dealers report that their relatively small investment of a few hundred dollars in sanding machines and accessories is often returned in less than a year. On a national basis, overall income derived from this service breaks down as follows: 45% of income from machine rentals, 25% of income from sandpaper sales, and 30% of income from sundry items, including finishes, tools (brushes, scrapers, cloths, tack-rags, mops, waxers, polishers, etc.) and miscellaneous items such as linseed oil, alcohol, turpentine, thinners and dryers.

Types of Floor Sanders

There is a wide selection of floor sanding machines—over 40 different well-known models. Drum-type sanders range from 6 to 9 inches wide and weigh from 35 to 175

pounds. These are built to sand entire floors, and in some cases are provided with a narrow auxiliary edging drum to sand right up to the baseboards. Some machines are light enough to be operated by the merest novice; some heavy enough to be in demand by professional floor sanders.

Then, there are at least six popular models of light, portable disc sanders and belt sanders for edging, for sanding stair treads, for getting into closets, behind toilets, under radiators and into other places difficult to reach with the larger units.

Operation of the Rental Service

Display—Once the dealer decides to install a floor sanding machine rental service, he should call the attention of his customers to the service. There are several proven ways to do this.

First, pick out a prominent spot on the floor in the front of the store, preferably opposite the cash register. Sand a 15 square foot section of the floor. Outline this section with black or white paint to set it off from the rest of the floor. Letter in the words "Rent Our Floor Sander" or a similar advertising message. When the lettering is complete, varnish over the entire section to prevent wear and tear. Now arrange sanding machines, sandpaper and kindred items on or near the sanded area. Always keep the display spot clean and free of other merchandise not related to your sanding department so that every customer entering the store can see it.

Another successful method of calling the customer's attention to the rental service is to use a wood plaque which shows the contrast between "old" and re-finished flooring and bears a short advertising message announcing the rental service. The plaque should be about 3 feet high, 4 feet wide, and made of new hardwood flooring.

The dealer can make such a plaque by sanding the lower half of the assembled flooring section which forms the plaque very smooth. Leave the top half unsanded. Apply paste wood filler to the entire plaque. Then coat the top half with dark oak stain to represent the old portion of a floor. When the stain is dry, give the entire plaque a coat of white shellac cut 50% with alcohol. Allow 30 minutes for drying. This light coat of clear shellac prevents the colors from running when the lettering is applied. Next letter in the advertising message (it is better to have a professional sign painter do the the lettering, since this will be a permanent plaque), using Japan colors. Two or more coats of varnish over the lettering will preserve it much longer. The plaque should be mounted on a wall, column or easel above the floor space where the sanders are displayed.

Promoting the service—Word of mouth advertising by sales personnel is extremely effective. They should stress the ease and low cost of renewing floors with sanders. They should include reference to the related products the dealer wishes to sell—their quality, their ease of application, their value, their appearance after application, etc.

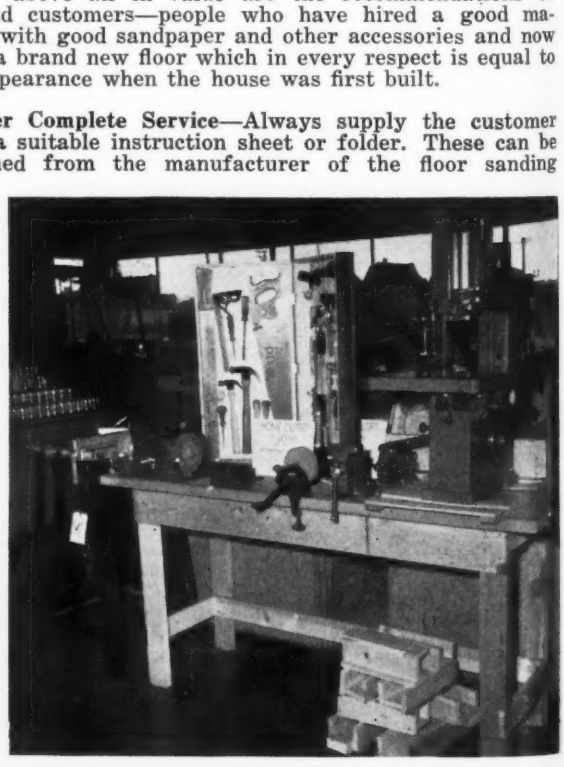
RENEW YOUR FLOORS YOURSELF
with our RENTAL FLOOR SANDERS!
FLOOR WEAR
IS ONLY "SKIN DEEP"
Sand off that dull surface coat and you'll have new floors again.
It's as easy as running the vacuum cleaner and you can sand 3 or 4 rooms a day.
We carry everything you need and show you how to get best results.
Why not stop in or phone us now?
$ PER DAY
Save 2/3 the cost!
(YOUR NAME HERE)

A STEADY rental business for floor sanders can be created with advertising like this.

Advertising in telephone directories and in local newspapers is effective both in renting machines and in selling floor materials. The ad can be small but should be run consistently, so that inquiries will be spread out and the machines kept in demand all the time. Sales-stimulating folders and booklets covering both machines and related items should be handed out to customers and mailed to them at every opportunity.

But above all in value are the recommendations of pleased customers—people who have hired a good machine with good sandpaper and other accessories and now have a brand new floor which in every respect is equal to its appearance when the house was first built.

Offer Complete Service—Always supply the customer with a suitable instruction sheet or folder. These can be obtained from the manufacturer of the floor sanding



DISPLAY power and hand tools in such a way that the customer can inspect and examine them closely. These items have an unusual ability to "sell themselves."

equipment. Instruct the customer on how to apply and change sandpaper, stressing the fact that the paper must be tight to the drum or breakage will result.

PROMOTING TOOL SALES

The development of a worthwhile volume of tool sales hinges on the coordination of the three major factors of all retail selling: personnel training, point of sale display, and advertising.

Point of Sale Display: Display at point of sale is just as important for tools as any other product in a dealer's inventory. For hand tools, a well-arranged wall display with tools sufficiently spaced to avoid a cluttered appearance is best. Most successful of these exhibit several of each kind of tool on racks and hangers where they are easily accessible to the customer. Thus, not only does the display have maximum effectiveness, but it also carries most of the tool inventory in an orderly manner.

Special lighting is advisable, and the many types of "hooded" display cabinets that have proved so popular with building products dealers, lend themselves to the installation of directed lighting that increases merchandise appeal many fold.

Make sure the tool cabinet is visible from all sections of the display floor and identified by name in large letters. The cutout block letter mounted above the display is an excellent way to accomplish this, and an entire store with merchandise identified in this fashion gives a pleasing impression to the customer.

An entirely different type of display should be used for most power tools. When possible, these should be set up on a work bench so that a "natural" appearance is given to them. This is effective for two reasons; first because it has a strong appeal for sale as a package, bench and all; and second, because a customer will be better able to examine and inspect the tools individually.

Tools are excellent gift items during the Christmas season, and special display emphasis should be given them at that time.

Personnel Training: Sales personnel should be thoroughly familiar with the use of all tools in the department. Customer questions are numerous, and nothing kills a sale more quickly than a salesman who is unable to supply satisfactory answers to questions.

Aside from this, the salesmen should also be alert to take maximum advantage of suggestive selling so that the tools needed to install or fabricate certain materials will be sold along with the building products.

Advertising: Since the sale of tools can be greatly stimulated by ordinary merchandising methods, advertising plays an important part in developing prospects; in getting the customer inside your store with the desire to buy.

To do this effectively, however, the advertising must be written and directed to overcome primary elements of sales resistance; (1) Do I need the product, (2) Should I buy it now, and (3) Can I afford it?

The most successful way yet developed to sell tools to the customer is by the package. For example, a complete home workshop may consist of a bench, circular saw, drill press, sander, grinder, and perhaps a small shaper or jointer, together with the proper size motor to drive the equipment.

It is an easy matter to illustrate and explain what would constitute a minimum workshop, a fairly complete one, and an entirely complete unit, breaking down the cost of each into monthly payment amounts. Such advertising reaches men of all means and overcomes the resistance to price immediately.

A similar method has been worked out for hand tools. These are assembled into kits of various sizes and costs, and advertised as units rather than individual pieces. Several tool manufacturers supply the complete kits including the special box that contains the tools.

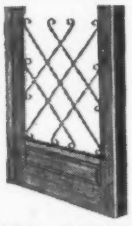
Most manufacturers have developed effective advertising and point of sale displays that help immeasurably to sell their products. It is always advisable to review this material carefully, and use it wherever possible in the overall promotional program.

Certain items mentioned in this section are definitely seasonal. Special advertising and point of sale emphasis should be placed on these during the peak periods of demand.

AT THE top is a complete tool department, exhibiting both power and hand tools. The center illustration demonstrates the effective use of limited space to display hand tools. Note the neat and orderly appearance of the garden tool rack in the lower picture.

SPRING TIME is FIX-UP TIME

ORDER THESE ITEMS NOW!



FITS-ALL ADJUSTABLE SCREEN DOOR GRILLE

Three sizes available to fit nearly any screen door. Enhances the beauty of a door and acts as a rigid brace, too. Comes complete with screws—anyone can install. Made of Alacrome metal with silvery satin finish—will not rust or tarnish.

SELL Nu-GLAZE INSTEAD OF PUTTY

Does the job better than putty, and makes you bigger profits too! Nationally advertised, nationally known and nationally used. Stock up on Nu-Glaze today!

Nu-CALK CALKING COMPOUND

Same fine product as in Speed Load. Nu-Calk Calking Compound is available in ½ pint, pint, quart, gallon, 5-gallon cans. Also 55-gallon drums. Nu-Calk is the standard of calking quality

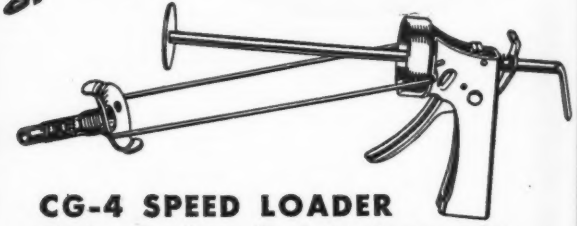
MACKLANBURG DUNCAN Co.
QUALITY
PRODUCTS

here's the most efficient, most popular calking load on the market!

Nu-CALK SPEED LOAD

Easy to use? YES! And even easier to sell! Here are some of the reasons why the new, improved NU-CALK SPEED LOAD enjoys such nationwide popularity. The specially designed cap insures perfect contact with gun nozzle—can't pull loose from fiber board tube. Glassine-lined container is air-proof, moisture-proof, practically vacuum packed. With SPEED LOADS the user's hands never touch the compound. Always has a smooth, even flow, and easy trigger action.

. . . and HERE'S THE STREAMLINED GUN TO GO WITH IT!

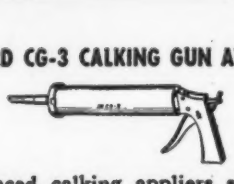


CG-4 SPEED LOADER

Here's the other half of this famous sales-making combination! This SPEED LOADER calking gun retails at a price that paves the way to more calking sales. It's light, sturdy, fool-proof. Retails for only $1.95. Show it and you'll sell it!

Your order will be shipped same day received!

STANDARD CG-3 CALKING GUN AVAILABLE



Experienced calking appliers still favor our CG-3 Standard Calking gun's easy trigger action and powerful piston action. Fitted for use with either Nu-Calk Speed Loads or bulk calking.

PACKAGED 10 LOADS TO A CARTON

There are 10 Speed Loads to each carton (Appr. one gal.) and 4 cartons to each case. Please order in multiples of 4 cartons. Full freight allowed on orders of 8 cartons or more.

MACKLANBURG-DUNCAN CO.

OKLAHOMA CITY 1, OKLAHOMA

Section 7

Glass
Glass Products
Plastic Glazing

GLASS, as a building product, or more correctly, group of building products, has become increasingly important in recent years. This is due partly to the popular favor of homes designed to allow the maximum entry of sunlight; partly due to research that has developed new products to permit the use of glass as a structural material without the necessity of costly and complicated supporting members.

As a result, there has never before been such a wide variety of uses for glass and glass products in construction of all types; and particularly in the light construction field.

Not so many years ago the building products dealer confined his glass inventory to a stock of window panes, whereas now a very high percentage of dealers have added such items as glass blocks, processed glass panels, double glazed units, structural glass items, mirrors, etc., to their lines of merchandise. Not only has the demand for these products been sufficiently great to warrant their doing so, but because of the steady turn-over, dealers have found these items contribute substantial profits to their overall operation.

Since there is such widespread use for glass products, the dealer should be familiar with them all. The following section, therefore, surveys these products and their applications.

FLAT GLASS

Flat glass is now such an important part of our modern way of life that it is almost always within sight or reach of all of us wherever we may be—at home or at work, in church or school, in auto or bus or train or airplane, in the city or town or on the farm. It is difficult to imagine a structure of any consequence which does not involve flat glass in some form in its construction or maintenance.

It is only natural, then, that flat glass has become part of the stock-in-trade of the retail lumber and building material dealer, and is becoming an item of ever increasing importance from the standpoint of both new construction and replacement.

There are two main factors which are bringing this about. First, there is the unprecedented amount of new construction underway and planned for the future. Secondly, there is a definite trend toward the increased use of glass areas in each building unit.

New home designs call for more windows and larger windows than ever before. This is especially true in the new solar houses in which whole south walls are of glass.

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The general acceptance of the visual front, by which commercial buildings are "opened up" to the view of passing prospects, has greatly increased the area of plate glass required in that important field.

"Daylight Engineering" which applies the latest technical skill of glass manufacturer and distributor, architects, engineers, and designers to the problems of the natural illumination of factories, schools, hospitals, and public buildings, is bringing about the increased use of glass in those types of buildings. All of these developments are stimulating immediate demand for initial sales and are increasing the already large replacement potential.

The handling of window glass has become almost traditional with lumber and building material dealers. Many also have been supplying the needs of their customers for other types of flat glass.

General Characteristics.

Today there are many forms of flat glass, each one of which is made to perform a specific function and fill a definite need. There are, however, certain general characteristics which are common to all forms. In greatly simplified terms, all flat glass is composed of sand, soda, and lime, in varying proportions and with other supplementary ingredients depending on the type desired, fused at high temperature, and drawn or cast into flat sheets. All glass is unaffected by moisture, rust, and decay of all kinds. Its polished surface is unmarred by liquids, alkalies, alcohol, and almost all acids. Its finish is hard, lasting, sanitary, easy to clean.

WINDOW GLASS

The "old standby" of the lumber and building material dealer is window glass or flat drawn sheet glass. Yet many dealers who have been selling and installing window glass for years have not had time to pause and think about its fascinating history and bright future.

Window glass has a long past. Its first commercial form probably was what is known as crown glass. This product, far from perfect by today's standards, was made by blowing a glass sphere, or bubble, on the end of a hand blow-pipe. By twirling the pipe while the glass was still soft, the bubble was spread by centrifugal force. From this shape, sheets were cut from the less curved areas and ironed in a hot oven. The result was expensive, contained many defects, produced marked visual distortion, and was never flat.

A step forward was made when the hand method was changed by swinging the bubble in a pit while lung-power was applied to the other end of the blow-pipe. This process resulted in a cylinder which was later reheated, split, and ironed. Cylinder glass was an improvement over crown glass. It gave a higher yield and was of better quality. Also larger sizes were available. But cylinder glass still distorted vision to a high degree because of the ironing process and it, too, was never flat.

Still later the cylinder process was modified by the introduction of machine blowing. This produced larger cylinders and increased output but the resulting glass was still subject to many of the defects of hand blown cylinder glass. Among other things, it was always bowed. This was especially troublesome to glaziers and installers for the bowed light of glass never laid flat along the sash rabbet. This caused excessive breakage.

By the beginning of the present century, many glass makers had decided that blown glass in any form had too many inherent defects to allow its being converted into window glass of the quality desired. Several men began the struggle to draw window glass in the flat state direct from a tank of molten glass. Foremost among these was Irving W. Colburn. Even Colburn, after exhausting his fortune on 15 different machines over a period of several years, had not achieved the goal.

By the continuous flat-drawing process window glass can be made in much larger quantities than was the case with preceding methods. Furthermore, the quality is very greatly improved and controlled. There are fewer metal defects, such as seeds and bubbles, and less distortion.

Because glass formed by the flat-drawing process travels without interruption through long lehrs, highly controlled chambers in which glass temperatures are slowly and uniformly reduced, it is freer from strain. It, therefore, cuts more easily and breakage is reduced. Old types of window glass, because they were bowed, were more prone to break in the sash, especially during glazing operations. This troublesome and expensive difficulty has been minimized with modern drawn window glass, due to its remarkable flatness.

WINDOW GLASS SPECIFICATIONS

Classification	Quality	Thickness in Inches	Approximate Wt. Sq. Ft. in Ozs.	Maximum Size Furnished
Window Glass				
Single Strength	"AA," "A," "B"	.087-.100	19.50	90 united in.
Double Strength	"AA," "A," "B"	.118-.133	26	120 united in.
Double Strength	Greenhouse	.118-.133	26	16″ x 18″ 16″ x 24″ 18″ x 20″
1/4″ Heavy Sheet	"AA," "A," "B"	.187-.205	40	50 sq. ft.
1/4″ Heavy Sheet	"AA," "A," "B"	.210-.230	45	60 sq. ft.
Picture Glass				
19-23 lts. per in.	"AA," "A," "B"	.043-.053	9 to 11	60 united in.
Picture Glass				
15-17 lts. per in.	"AA," "A," "B"	.058-.068	12 to 14	60 united in.
Picture Glass				
12-14 lts. per in.	"AA," "A," "B"	.070-.080	15 to 17	60 united in.

"AA" quality is specially selected glass for high grade work.
"A" is select glass of superior glazing quality.
"B" is suitable for general glazing purposes.
Greenhouse is below "B" in quality and is available in double strength only in sizes 16″ x 18″, 16″ x 24″ and 18″ x 20″.
United inches are determined by adding the width and the length of the size involved. Thus a light 28″ x 28″ would have 56 united inches.

Packing

Window glass of 100 united inches and less is packed approximately 50 sq. ft. per box; over 100 united inches approximately 100 sq. ft. per box.

Uses

Window glass for glazing windows, doors and storm sash in houses, apartments, and other types of buildings.

Heavy sheet glass for glazing windows and doors where greater strength is required but where slight distortion is not objectionable; for shelving, display cases, window ventilators, and furniture tops.

Picture glass for covering pictures, photographs, maps, and prints.

THE MACHINE shown above is the feed end of a process that manufactures plate glass in a continuous flow. Raw materials are fed into the tank mechanically, and the molten glass is ejected automatically from the other end.

PLATE GLASS

In the case of window glass, described above, the two surfaces remain unchanged, just as they come from the machine, with a fire polish. Plate glass, on the other hand, is first made into blanks either by being cast in its molten state from large clay pots or rolled in a continuous sheet from a tank. These blanks, which are usually ribbed, are then ground and finally polished on both surfaces with the objective of making them flat and parallel. This results in clear vision and a minimum of distortion.

Qualities

Regular plate is produced in silvering and mirror glazing qualities, which are used in making fine mirrors and for high quality glazing in residences, and in glazing quality, which is used for general glazing purposes. Color clear and colored plate are furnished in quality equivalent to regular plate glass.

Uses

Below are suggested a few examples for the use of plate glass.

1. Regular plate
   - 1/8", 13/64"—Small panes, leaded lights, railway coaches, mirrors, etc.
   - 1/4"—Windows of public and office buildings, residences and apartment buildings, show windows, show cases, street cars, railway coaches, shelving, table and desk tops, large mirrors, etc.
   - 1/2"—Portlights, long shelves, glass furniture, background for decoration, etc.
   - 1/2" to 1 1/4"—Floor, deck and portlights on ships; aquarium tanks, glass furniture, table and desk tops, etc.
2. Color clear plate glass, which is exceptionally clear and colorless, is ideal for picture windows, commercial, refrigerator cases, and mirrors.

3. Colored plate glass can also be used for picture windows. It is very effective for mirrors and for various decorative effects.

Types of Plate Glass

Types of plate glass in general use are as follows:

1. Regular plate
2. Color clear plate
3. Colored plate
4. Heat absorbing plate (to be discussed later)

Thicknesses, sizes, and weights of various types (except heat absorbing) are shown in the table below:

PLATE GLASS SPECIFICATIONS

Type or Color	Thickness	Thickness Tolerance	Standard Maximum Width and Length	Maximum Size Special Order	Approx. Weight Lbs. Per Sq. Ft.
Regular	1/8"	± 1/32"	72" x 74"	74" x 144"	1.64
	11/64"	± 1/32"	72" x 74"	74" x 144"	2.65
	1/4"	± 1/32"	124" x 170"	124" x 250"	3.27
	3/16"	± 1/32"	100" x 150"	100" x 200"	4.90
	1/2"	± 1/32"	100" x 160"	100" x 200"	6.54
	5/8"	± 1/32"	80" x 140"	100" x 160"	8.17
	3/4"	± 1/32"	80" x 130"	100" x 150"	9.81
	7/8"	± 1/32"	40" x 100"	50" x 100"	11.44
	1"	± 1/32"	40" x 100"	50" x 100"	13.08
	1 1/4"	± 1/16"	40" x 100"	50" x 100"	16.25
Color Clear	1/8"	± 1/32"	40" x 80"	55" x 90"	1.64
	1/4"	± 1/32"	70" x 140"	90" x 140"	3.27
Colors:					
Standard Blue	1/4"	± 1/32"	100" x 140"	110" x 170"	2.86
Medium Blue	1/4"	± 1/32"	100" x 140"	110" x 170"	2.86
Dark Blue	1/4"	± 1/32"	100" x 140"	100" x 170"	2.86
Peach	1/4"	± 1/32"	100" x 140"	100" x 170"	2.86
Golden	1/4"	± 1/32"	95" x 120"	100" x 150"	2.86

HEAT ABSORBING PLATE GLASS

Description

Heat absorbing polished plate glass is a product of special chemical composition, pale bluish green in color, and made to absorb a high percentage of the infra-red heat rays of the sun. Part of the absorbed heat is subsequently transferred to the interior, but a considerable portion is given off to the exterior, effecting a net reduction of the solar heat entering through the glass.

Characteristics

Heat absorbing plate glass 1/8" thick excludes 29½% of the total solar radiation, 1/4" thick 38½%, as compared with an exclusion of 9½% afforded by regular plate glass 1/4" thick. These figures are based on the assumption of 50% of the re-radiation of the absorbed heat in the glass to the interior and 50% to the exterior. This reduction of solar heat transmission will produce a cooler atmosphere inside, resulting in lower initial cost for the air conditioning equipment and reduced cost of operation. Heat absorbing plate glass reduces sun glare, and provides light which is restful to the eyes and nerves.

Uses

Heat absorbing plate glass is particularly suited for glazing the windows of office and apartment buildings, hospitals, schools, factories, and other types of buildings where the exclusion of solar heat is a problem. Merchants whose wares are perishable will find heat absorbing plate glass beneficial for show windows. Because of its heat absorbing characteristics, this glass helps protect merchandise such as fruits, vegetables, candy, flowers, and other perishables, helps to keep it fresh much longer. It also is useful for windows of stores and ice cream parlors where refrigerating equipment may necessarily be in line with rays of the sun coming through show windows.

THICKNESSES, SIZES AND WEIGHTS

Thickness	Thickness Tolerance	Standard Maximum Width and Length	Maximum Size Special Order	Approx. Weight Lbs. per Sq. Ft.
1/8"	± 1/32"	40" x 80"	55" x 90"	1.64
1/4"	± 1/32"	70" x 100"	100" x 130"	3.27

TEMPERED PLATE GLASS

Tempered plate glass is made by a process of reheating and sudden cooling, as a result of which the outer surfaces are in a state of high compression while the central portion remains in tension, producing a condition highly resistant to breakage. The process can be applied to both clear and colored plate glass.

Properties

Tempered plate glass is approximately three to five times stronger than regular plate glass in sustaining loads and resisting fracture due to strain, and approximately five to seven times more resistant to ordinary impact and three times more resistant to thermal shock. It is more resistant to bending stresses than ordinary plate glass. A piece of 1/4" tempered glass 42" long and 12" wide can be twisted through an angle of 20° without breaking. Tempered glass retains the same appearance, clearness, hardness and coefficient of expansion as regular plate glass. When its limit of resistance is reached, it does not break like ordinary glass, into jagged pieces, but disintegrates into small crystals.

Special Conditions

Tempered plate glass can be ordered in circles, squares, rectangles and special shapes cut to pattern. It can also be supplied in a variety of edge finishes. However, since it cannot be cut after it is tempered, the exact sizes required must be specified, and intricate designs should be submitted for approval.

Uses

The greater strength of tempered plate glass has resulted in its wide use for visual entrance doors, ship's glazing, steam and oil pressure gauge covers, shelving, furniture, counter tops, show cases, and for enclosures in museums, zoological gardens and aquariums. Its ability to withstand impact makes it especially adaptable for balustrades, stair railings, push and kick plates on doors, windows in gymnasiums and sport arenas, and in jails, hospitals and mental institutions.

Tempered plate glass doors have come into wide use for entrances into stores, commercial buildings, and public structures of all kinds. Since they are, practically speaking, all glass they allow maximum visibility. Consequently they are especially advantageous in retail establishments.

Tempered plate doors cannot be fitted or altered on the job. This means that they must be made complete at the factory in a wide range of sizes and to quite exact dimensions. Necessary hardware, in a variety of types and finishes must also be attached at the factory. Because of these factors it is impracticable to include full information on tempered plate doors in a manual of this size. Your glass distributor has complete data on measuring, ordering and installation. Call on him whenever you see an opportunity to sell tempered plate glass doors.

MIRRORS

The growing use of plate glass mirrors makes them increasingly important items to the lumber and building material dealer.

Qualities

Mirrors are graded according to the quality of plate glass used. "A"—(silvering quality) used only for the finest mirrors. No. 1 (mirror glazing quality) used for all types of selected mirrors. No. 2 (glazing quality) used for all other plate glass mirrors which are termed "commercial" mirrors.

These standards correspond to those established by the Department of Commerce through the National Bureau of Standards as Commercial Standard CS27-36.

Size Limitations

When facing wall areas with large mirror sections, it is generally advisable to keep the size of the sections within 7 x 12 feet, although larger dimensions can be furnished for special conditions. Larger wall areas may also be covered with a series of adjacent mirrors.

Uses

Mirrors are playing an increasingly important part in modern decoration and design. Architects and designers have found that mirrors bring increased light, beauty, sparkle and spaciousness into residences, hotels, apartment houses and public buildings.

A recent use of mirrors is to double the apparent size of a room or space by facing one wall or two adjoining walls with large mirror sections, attached with rosettes or mastic.

Circular mirrors for dining rooms, fireplace-to-ceiling mirrors for living rooms, full length, plate glass mirrors for bedrooms and dressing rooms, built-in-mirrors for smart powder rooms—all aid in introducing charm and dignity into modern homes.

Commercial uses for mirrors are wide and varied—up-to-the-minute department stores and showrooms use large areas of mirrored surfaces for background effects, triple mirrors in clothing sections, overhead mirrors for decorative purposes. Mirrored walls and ceilings are used extensively in bars, restaurants, clubs, theaters, etc. and add decorative beauty and spaciousness where room is limited.

TRANSPARENT MIRRORS

Durability and permanence are outstanding qualities of transparent mirrors—a new product using evaporated chromium alloy for "one-way-mirror" installations.

With a light transmission of approximately 15% and a light reflection from the mirrored side of about 45%, the specially treated plate glass when properly installed serves as a mirror from the front, but is transparent when viewed from the back.

When a transparent mirror is installed between two rooms, one of which is brightly lighted and the other dimly lighted, an observer in the dark room can see into the lighted one, but the glass has the appearance of an opaque mirror in the illuminated room. The perfection of the performance is governed by the difference in brightness between the two rooms. The mirrored side should be installed toward the room into which a view is desired.

Sizes

Transparent mirrors can be obtained in ½" plate glass and in sizes up to 30" x 40".

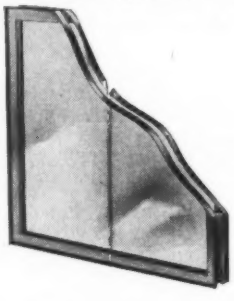
Uses

The following suggested uses for transparent mirrors are a few of many possible applications:

In residence entrance doors, hospital observation windows (particularly psychiatric), show windows, nursery doors in residences, instrument manufacturing (used in cameras and other scientific instruments), night clubs and taverns, security windows in government offices, banks, post offices, FBI offices, police departments, private offices, factories and institutions, and colleges and universities (psychology departments). The mirrors also are suitable for novel advertising signs and show windows.

DOUBLE GLAZED UNITS

One of the most significant glass developments in recent years is double glazed insulating glass. Because it is newer than other glass products but more because it will unquestionably become increasingly important to the building industry, insulating double glazed units will be given a more detailed treatment than other glass products in this manual.



THIS is a cutaway view of double glazed unit. The metal-to-glass bond seals the edges of the two panes of glass.

Description

Insulating double glazed units constitute a factory-built transparent glass unit composed of two or more lights of glass separated by ¼" or ½" of dehydrated captive air, hermetically sealed around the edges at the factory.

Manufacture

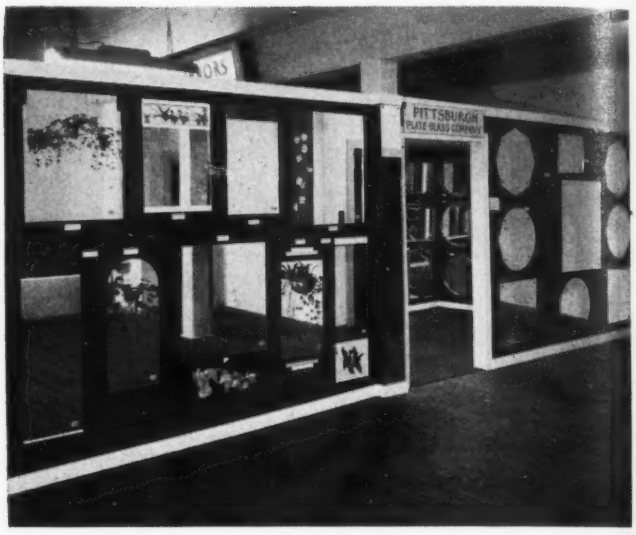
These units can be furnished in squares, rectangles or straight edge shapes, providing angles on such shapes are not too acute. It is generally fabricated to ordered sizes, but manufacturers have developed certain standard sizes.

Three Features

1. GREATER YEAR ROUND INSULATION against cold and heat. Makes living conditions more healthful and comfortable and saves fuel.
2. CLEARER VISION. The sealed-in dry air greatly reduces the possibility of condensation on the glass.
3. ONLY TWO SURFACES TO CLEAN. The glass surfaces inside a unit are specially cleaned at the factory.

Uses

Double glass is practical for glazing of wood or metal windows and doors in homes, apartments, schools, hospitals and other structures requiring heating or air conditioning.



MIRRORS may be displayed most effectively by hanging them against the wall. Brown and black are effective colors for a background.

Heat Loss Transmission

Double glazed units provide a high resistance to heat flow, varying with the number of panes and the thickness of the air space used. In summer the low heat transmission coefficient reduces the load on air conditioning systems. In winter it saves heat.

The greater efficiency of double compared with single glazing makes it possible to use larger windows to keep the cost of fuel constant. It is said that a house could have 115 square feet of double glazed instead of 40 square feet of single glazing without any increased loss of heat. Double glazing permits the influx of a larger amount of the solar heat through exterior glazing of buildings without a prohibitive compensating loss by conduction. By combining various types of heat-absorbing and colored glass in the fabrication of double glazing, the amount and quality of light transmission may be controlled, if this is desirable.

Because double glass is an insulating unit, it reduces the coefficient of heat transfer. This increases the temperature of the surface facing the room side, thereby reducing "windowpane chills" and making living conditions more healthful and comfortable. Many builders have found this a desirable sales factor.

Heat Transmission Table

The over-all heat transmission coefficient U varies with the ranges of temperature at which the coefficient is determined. For most practical heat loss calculations, coefficient U can be the value determined at 10 degrees outside temperature, 70 degrees inside temperature, 15 mph outside air velocity, 0.25 mph average inside air velocity. The table gives such values from actual tests with glass sizes 30" x 30".

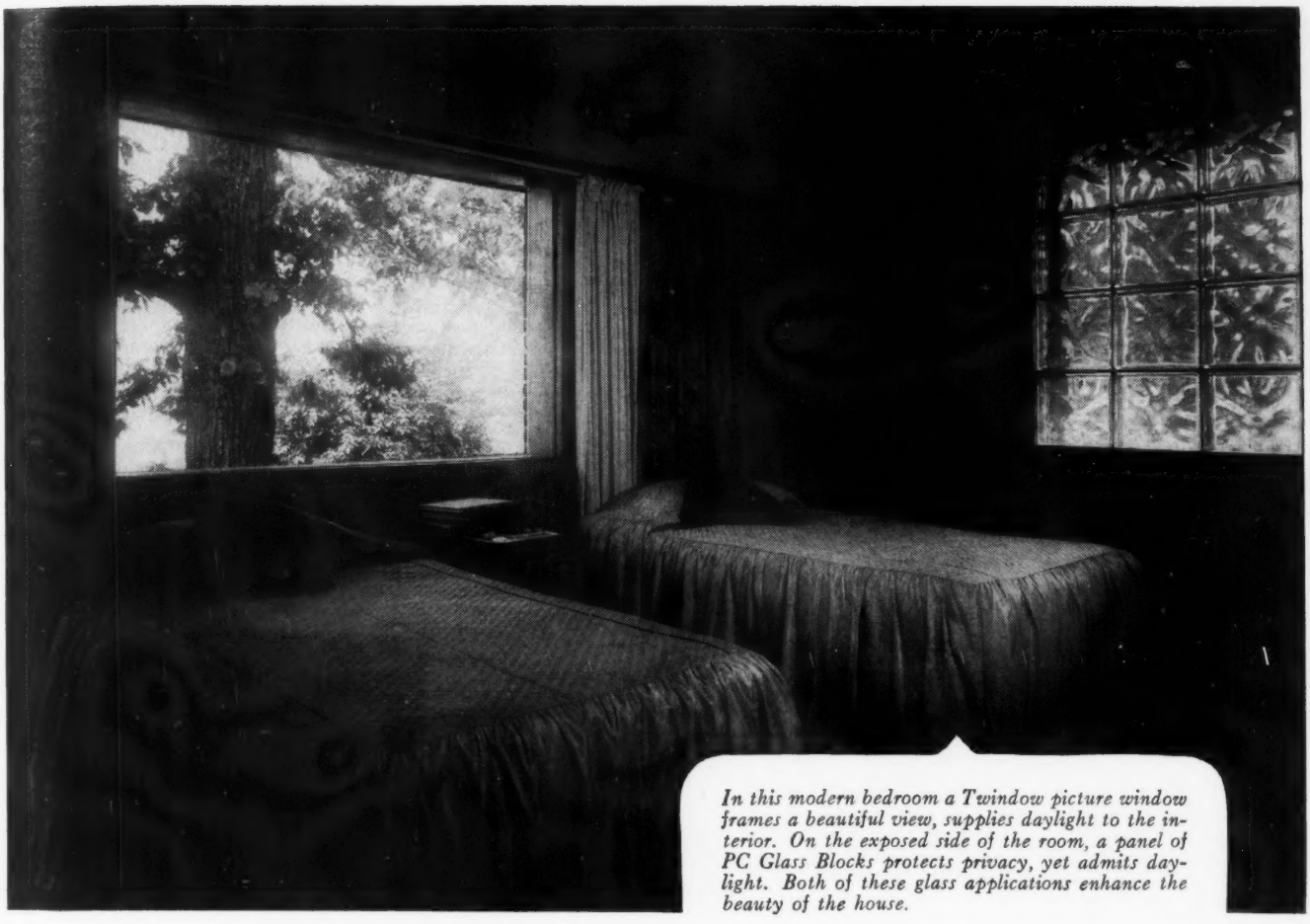
Number of Panes	Glass Thickness	U Valve Air Space None	¼"	½"
Single Glass	⅛"	1.16		
Double Glazed (one air space)	¼"	1.15		
Triple Glazed (two air spaces)	⅛" or ¼"		.65	.58
	¼"		.47	.40

Extra Strength Conditions

Where extra strength in glazing is required to withstand high pressures which would rupture standard plate glasses, insulated double glazed units can be manufactured from ¼" tempered plate glass.

Standard Sizes

The new standard sizes for double glazing recently have been developed in cooperation with leading manufac-



In this modern bedroom a Twindow picture window frames a beautiful view, supplies daylight to the interior. On the exposed side of the room, a panel of PC Glass Blocks protects privacy, yet admits daylight. Both of these glass applications enhance the beauty of the house.

▶ It's a proven fact*

TODAY'S HOMEMAKERS WANT *more glass*

● A recent survey* among a group of homemakers who had built new homes revealed that 37% of the interviewees had included glass blocks in their building specifications. This is typical of the desires of today's homemakers. They want more glass. When they build they *specify* glass; when they buy ready-built houses they *expect* it. Whether you are building single houses on contract, building a group of units for resale, or just making recommendations to customers, it will pay you to include several applications of Pittsburgh Glass.

There are many Pittsburgh Products which will add sales appeal to a house. A picture window to admit daylight, bring outdoor beauty inside; colorful Carrara Structural Glass for wainscots of kitchens and bathrooms; "spruce-up" mirrors; mantel mirrors; and every home needs at least one full-length door mirror.

We will be glad to send you our free illustrated booklet showing many ways of using Pittsburgh Glass to make a home more beautiful, more comfortable to live in. Just mail the coupon below and your copy will be sent promptly.

Pittsburgh Plate Glass Company
2143-9 Grant Building, Pittsburgh 19, Pa.

Gentlemen:

Please send me, without obligation, your four-color illustrated book showing modern uses of glass in the home.

Name_____

Address_____

City_____ State_____

*Survey conducted by Small Homes Guide. Analysis and Tabulation by Kenneth B. Colby, Dayton, Ohio.

PPG

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS

PITTSBURGH PLATE GLASS COMPANY

turers of wood and steel sash in answer to requests from many architects, designers and builders. (See chart for full details.) These standard size units comply with the American Standards Association 4″ modular construction.

There are numerous advantages to specifying standard sizes. Manufacturers of wood sash have developed standard picture window frames and sash units using them. Glass distributors and wholesale sash and door jobbers will carry warehouse stocks of these units, thus making them more readily available. Builders can incorporate standard sizes in their specifications. Replacements and duplications of orders will be handled more quickly.

Picture Windows—Standard Sizes

The new standard units are being manufactured in a wide range of sizes, readily adaptable by builders for new construction and remodeling.

The sizes for picture windows in single lights, double hung wood window units and residential steel sash casements are shown on the chart.

STRUCTURAL GLASS

Structural glass is opaque colored glass, 11/32″ or more in thickness, which can be applied to walls and other vertical or horizontal areas. It offers a practical means of attaining unusual beauty that is preserved by characteristics inherent in glass. Panels provide a more pleasant appearance than areas made up of many smaller pieces. Joints are so narrow as to hardly be noticeable.

Characteristics

Structural glass is opaque, homogeneous, non-absorbent and impervious to moisture. Possesses high tensile and crushing strength, and is highly resistant to absorption. It will not warp, swell or craze. Liquids in common use cannot penetrate it, and it will not absorb liquids or gases that give off unpleasant odors. It is not easily stained and will not burn. It is difficult to write or mark upon and is easily cleaned by the whisk of a damp cloth—or in extreme cases by the application of soap and water. Because of these characteristics structural glass has won the favor of builders and home owners.

The color of structural glass is not a coating—it is all through the glass, providing a deep lustrous tone that is unharmed by weathering, steam, water or other elements that cause deterioration of less stable surfaces. Structural glass bathroom walls are the pride of home owners after many years of subjection to splashing and washing. The structural glass colors were selected after much study to attain shades that blend well with each other. These colors harmonize beautifully with standard colors used by kitchen and bathroom fixture manufacturers. And the colors are in shades that blend readily with drapes, curtains and other home decoration elements.

Size Limitations Recommended

For the maximum of beauty, strength and efficiency, structural glass panels should be restricted to the following range of sizes according to the type of installation: bathroom and kitchen walls, 8″ x 12″ to 24″ x 24″; interior walls for commercial buildings up to 30″ x 36″; storefront facing, 6 square feet; toilet partitions, up to 60″ x 60″.

Installation

Structural glass can be applied over any relatively flat hard wall surface that is not subject to warping. (It should not be installed on wood.)

It is installed in interiors with mastic and 1/64″ joints buttered or pointed with joint cement. Pointing is usually sufficient but for shower partitions and wainscoting, the joints should be buttered and pointed. For exterior installation, it is attached with asphaltic mastic and supported at the lower edge adjoining the sidewalk and at horizontal joints by concealed shelf angles or by metal angles having facing shapes that overlap. All joints on exteriors should be 1/16″, buttered and pointed with joint cement. All horizontal joints should be cushioned with adhesive cork tape.

Direct contact with metal, concrete or other hard substances should be avoided and some kind of cushioning material should always be provided. Butting edges should be ground and chamfered, exposed edges polished and chamfered or finished with quarter round. Avoid sharp mitered corners. Corners subjected to rough usage should have metal guards. The extremities of a storefront installation should be protected with a suitable metal member. Top courses should have projecting member of metal or other material provided with a drip. Distance from background wall or surface to face, 5/8″ to 3/4″ for 11/32″; 3/4″ to 7/8″ for 7/16″. Your glass distributor has details and specifications for structural glass construction available upon request, also booklets dealing with storefronts, theaters, restaurants, table tops, counters and soda fountains, bathrooms, kitchens, etc.

Uses

The applications of structural glass are as general as the desire for long-lasting beauty. Facing of storefronts and exteriors of buildings. Lobbies of hotels and office buildings. Wainscoting for partitions, corridors, washrooms, toilets and shower baths in public buildings. In homes—for wainscoting of bathrooms, kitchens, breakfast rooms as well as work table tops and splash backs.

LAMINATED SAFETY GLASS

Many lumber and building material dealers, especially in those localities not being served by auto glass dealers, have built up a profitable business in laminated safety glass. They have equipped themselves to install safety glass at retail or for nearby auto repair concerns.

Safety glass is a glass unit composed of two lights of glass laminated with an interlayer of transparent plastic by a process involving extreme heat and pressure.

A series of improvements have marked the development of safety glass, chiefly involving the plastic interlayer. This plastic has unusual strength, elasticity, and adhesion.

When safety glass is fractured, the particles of glass tend to adhere to the plastic, affording more protection against flying glass fragments.

Types

In the table below various types of laminated safety glass are described as follows:

Thin safety glass is made up from two lights of picture glass.

S.S. from two lights of single strength window glass.

Combination from one light of single strength and one light of double strength.

D.S. from two lights of double strength.

Safety plate from two lights of thin plate glass.

Kinds of Glass	SAFETY GLASS		Thickness Tolerance	Maximum Size	Net Weight Lbs. Per Sq. Ft.
	Number of Lights	Thickness of Safety Glass			
Thin Safety Glass	2	5/32″	−1/32″	Up to 7 sq. ft.	1.75
S.S. Safety Glass	2	7/32″	±1/32″	Sizes	2.63
Combination Safety Glass (S.S. & D.S.)	2	11/64″	±1/32″	up to 15 sq. ft.	3.00
D.S. Safety Glass	2	1/4″	±1/32″	of area	3.05
Safety Plate	2	1/4″	±1/32″	60″ x 74″	3.05

Heavy Safety Plate: 2 ply thickness — 11/32″, 3/8″, 13/32″, 1/2″ 5/8″ 7/8″ 1″; maximum size 60″ x 74″; weights ranging from 4.47 to 13 lbs. per sq. ft.; thickness tolerance ±1/32″ for thicknesses 11/32″ to 5/8″; ±1/16″ for thicknesses 3/4″ to 1″.

Bullet Resisting Glass: thicknesses—3/4″, three ply; 7/8″ and 1″, four ply; 1 3/16″, 1 9/16″, 2 3/32″, five ply; 2 1/2″, 7 ply; 3″, 9 ply. Maximum sizes, 43″ x 63″ or 33″ x 73″. Weights range from 9.75 to 39 lbs. per sq. ft. on basis of 156 lbs. per cubic ft. Thickness tolerance ±1/16″ for thicknesses 3/4″ to 2 3/32″; ±3/32″ for thicknesses 2 1/2″ by 3″.

Tuf-flex plate glass in thicknesses of 1/4″ to 1 1/4″ can be combined into Safety Glass to maximum sizes of 18″ x 24″. Requirements for Safety Glass or Bullet Resisting Glass other than listed should be submitted for consideration.

Uses

Windows and windshields in automobiles, buses, trucks, railway coaches, airplane, etc. View panels and barriers for animal cages in zoos and aquariums. Windows, doors, screens, glass furniture or any use where breakage or collapse of glass might cause damage or injury.

Bullet-resisting glass, composed of multiple laminated layers of glass and plastic is used for enclosures in banks, cashiers' cages, jewelry stores and as protective guards or screens.

Safety glass cannot be set with the types of putty or mastic ordinarily used in glazing because they are likely to cause deterioration of the plastic.

windowpane that insulates!

PICTURE WINDOWS AND WINDOW WALLS

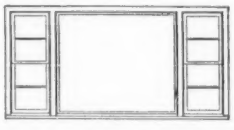
Double *Thermopane* manufactured with two lights of ¼″ Polished Plate Glass with ½″ air space is standard for Picture Windows and Window Walls. The standard sizes for units which can be used as either Picture Windows or Window Walls are:

42″ x 66″, 56½″ x 66″, 64½″ x 66″, 72½″ x 66″, 84″ x 66″, 96″ x 66″, 42″ x 72″, 84″ x 72″ and 96″ x 72″. All *Thermopane* units can be used with either dimension set vertically.

Picture Windows in Aluminum Sash

Aluminum sash manufacturers have developed units which will use *Thermopane* standard sizes either for separate Picture Windows or for Picture Windows with flanking double hung aluminum sash. One manufacturer of aluminum sash has developed a standard Picture Window unit which can be used as a single sash or with flanking double hung stock windows. For the latter, the following standard glass sizes have been adopted:

Picture Window Sash Opening (Without double hung unit) Width	Height
4′-0″	x4′-8″
5′-0″	x4′-8″
6′-0″	x4′-8″
4′-0″	x5′-0″
5′-0″	x5′-0″
6′-0″	x5′-0″



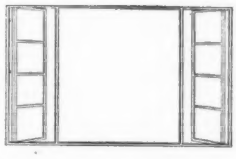
Picture Window Glass Size Width	Height
46⅛″	x52½″
58⅛″	x52½″
70⅛″	x52½″
46⅛″	x56½″
58⅛″	x56½″
70⅛″	x56½″

● *Note:* Standard double *Thermopane* units for these sash are composed of two ¼″ panes of polished plate glass with ½″ air space.

Picture Windows in Steel Sash

Major steel sash manufacturers have developed four units which will use *Thermopane* standard sizes as fixed Picture Windows in residential steel casements. These sizes are listed below:

Picture Window Sash Opening Width	Height
4′-5 1/16″	x4′-2⅝″
4′-5 1/16″	x5′-3″
5′-9 3/16″	x4′-2 5/8″
5′-9 3/16″	x5′-3″



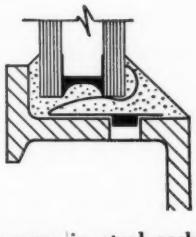
Picture Window Glass Size Width	Height
50 3/16″	x47⅞″
50 3/16″	x60¼″
66 5/16″	x47⅞″
66 5/16″	x60¼″

● *Note:* Standard double *Thermopane* units for these sash are composed of two ¼″ panes of polished plate glass with ½″ air space.

Note: Window openings will vary according to individual sash manufacturer's specifications. Therefore, manufacturers should be contacted for full information regarding their units.

RESIDENTIAL STEEL SASH

Thermopane, manufactured with two lights of Double Strength "A" quality Window Glass or ⅛″ Polished Plate Glass, both with ¼″ air space, is standard for residential steel casement windows. For detailed information, contact the nearest L·O·F office.



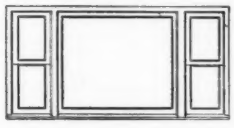
● *Note:* For satisfactory glazing of *Thermopane* in steel sash, use special clips developed by Libbey·Owens·Ford. The illustration at right shows the application of the glazing clip in steel sash.

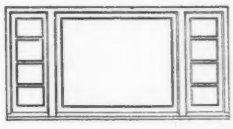
STANDARD WOOD PICTURE WINDOW UNITS

with

Flanking Double Hung **Flanking Casements**

Manufacturers of wood sash, using *Thermopane* standard sizes, have developed standard Picture Window frames and sash units which can be combined with flanking casement or double hung stock units as illustrated below.

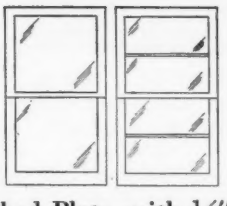




Picture Window Sash Opening (Without double hung unit) Width	Height	Picture Window Glass Size Width	Height	Window Opening (Including the casement units) Width	Height	Picture Window Glass Size Width	Height
4′-4″	x4′-2″	48¼″	x46″	6′-5¼″	x3′-2⅜″	35½″	x36″
5′-0″	x4′-2″	56½″	x46⅛″	4′-4″	x4′-7″	48″	x48″
6′-4″	x4′-2″	72½″	x46″	6′-4″	x4′-7″	72″	x48″
4′-4″	x4′-6″	48½″	x50″	6′-5¼″	x4′-2⅜″	35½″	x48⅛″
5′-0″	x4′-6″	56½″	x50″	8′-1″	x4′-2⅜″	55¼″	x48⅛″
5′-8″	x4′-6″	64½″	x50″	9′-8¾″	x4′-2⅜″	75″	x48⅛″
6′-4″	x4′-6″	72½″	x50″	4′-4″	x5′-7″	48″	x60″
7′-0″	x4′-6″	80½″	x50″	6′-4″	x5′-7″	72″	x60″
8′-4″	x4′-6″	96½″	x50″	6′-5¼″	x5′-2⅜″	35½″	x60⅜″
5′-8″	x5′-2″	64½″	x58″	8′-1″	x5′-2⅜″	55¼″	x60⅜″
6′-4″	x5′-2″	72½″	x58″	9′-8¾″	x5′-2⅜″	75″	x60⅜″
7′-0″	x5′-2″	80½″	x58″				
8′-4″	x5′-2″	96½″	x58″				
10′-0″	x5′-2″	116½″	x58″				
5′-0″	x5′-10″	56½″	x66″				
5′-8″	x5′-10″	64½″	x66″				
6′-4″	x5′-10″	72½″	x66″				

● *Note:* Standard double *Thermopane* units for double hung and casements above are composed of two ¼″ panes of polished plate glass with ½″ air space.

DOUBLE HUNG TWO AND FOUR LIGHT WINDOWS

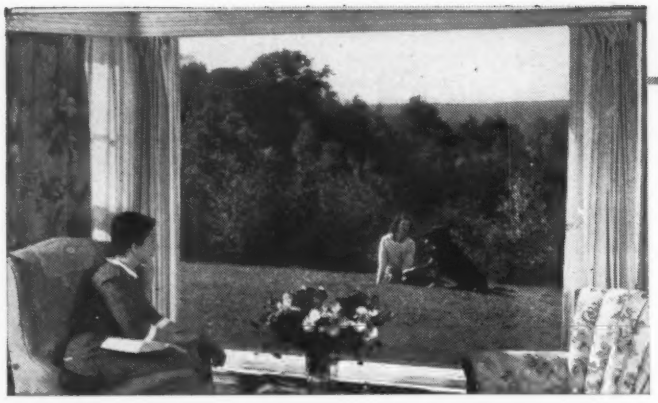


Wood sash manufacturers offer check rail double hung windows, in both two-light and four-light horizontal sash as illustrated.

Double *Thermopane*, manufactured with two lights of Double Strength "A" quality L·O·F Window Glass or ⅛″ Polished Plate, with ¼″ air space, is standard for double hung windows.

The complete range of standard sizes for double *Thermopane* double hung units is shown in the tables below.

Window Opening Width	Height	Glass Size 2-Light	Window Opening Width	Height	Glass Size 4-Light
2′-0″	x4′-2″	20″x22″	2′-0″	x4′-2″	20″x10 5/8″
2′-4″	x4′-2″	24″x22″	2′-4″	x4′-2″	24″x10 5/8″
2′-4″	x4′-6″	24″x24″	2′-4″	x4′-6″	24″x11 5/8″
2′-8″	x4′-6″	28″x24″	2′-8″	x4′-6″	28″x11 5/8″
3′-0″	x4′-6″	32″x24″	3′-0″	x4′-6″	32″x11 5/8″
3′-4″	x4′-6″	36″x24″	3′-4″	x4′-6″	36″x11 5/8″
3′-8″	x4′-6″	40″x24″	3′-8″	x4′-6″	40″x11 5/8″
4′-0″	x4′-6″	44″x24″	4′-0″	x4′-6″	44″x11 5/8″
2′-4″	x5′-2″	24″x28″	2′-4″	x5′-2″	24″x13 5/8″
2′-8″	x5′-2″	28″x28″	2′-8″	x5′-2″	28″x13 5/8″
3′-0″	x5′-2″	32″x28″	3′-0″	x5′-2″	32″x13 5/8″
3′-4″	x5′-2″	36″x28″	3′-4″	x5′-2″	36″x13 5/8″
3′-8″	x5′-2″	40″x28″	3′-8″	x5′-2″	40″x13 5/8″
4′-0″	x5′-2″	44″x28″	4′-0″	x5′-2″	44″x13 5/8″



A GREAT NAME IN GLASS

L·O·F *Polished Plate* GLASS

For fine Picture Windows and mirrors there is no substitute for Polished Plate Glass. This glass is ground and polished with the objective of making both sides flat and parallel, thus providing clear vision with a minimum of distortion. This flatness and freedom from distortion are two of the reasons why Polished Plate Glass is invariably selected for display windows in stores and shops.

USES 1/8", 13/64"—Small panes, leaded lights, mirrors, etc.

1/4"—Windows of public and office buildings, residences and apartment buildings, show windows, mirrors, show cases, shelving, push plates, furniture tops, etc.

3/8"—Large show windows, stair rail panels, shelving, table and desk tops, large mirrors, etc.

1/2"—Long shelves, glass furniture, background for decoration, etc.

1/2" to 1 1/4"—Aquarium tanks, glass furniture, table and desk tops, etc.

CHART FOR SPECIFYING
L·O·F POLISHED PLATE GLASS

Thickness	Standard Maximum Width and Length	Maximum Size Special Order	Approx. Weight Lbs. per Sq. Ft.
1/8"	72" x 74"	74" x 144"	1.64
13/64"	72" x 74"	74" x 144"	2.65
1/4"	124" x 170"	124" x 250"	3.27
3/8"	100" x 150"	120" x 200"	4.90
1/2"	100" x 160"	100" x 200"	6.54
5/8"	80" x 140"	100" x 160"	8.17
3/4"	80" x 130"	100" x 150"	9.81
7/8"	40" x 100"	50" x 100"	11.44
1"	40" x 100"	50" x 100"	13.08
1 1/4"	40" x 100"	50" x 100"	16.25

For data on colored polished plate glass, *Color Clear** Polished Plate Glass and various types of edge finishes, consult your L·O·F Distributor.

L·O·F TUF-FLEX* TEMPERED PLATE GLASS

Recommended where resistance to impact or thermal shock is desired. *Tuf-flex* is used for frameless glass doors, balustrades, stair railings, push and kick plates and for glazing gymnasium windows. It looks the same as regular plate glass. Exact sizes should be specified as *Tuf-flex* cannot be cut or drilled after tempering.

L·O·F *Vitrolite*... COLORFUL GLASS FACING

*Vitrolite** is an opaque structural glass with a hard, non-absorbent, abrasion-resistant surface. It will not warp, swell or craze. Easily cleaned with a damp cloth. Colors—sky blue, cadet blue, light gray, dark gray, jade, cactus green, alamo tan, peach, mahogany, white, red and black. All colors in 11/32" thickness; white and black also in 7/16" and 3/4".

INSTALLATION *Vitrolite* is installed in interiors with Vitro-cement and 1/64" joints buttered or pointed. For exterior installation, *Vitrolite* is attached with asphaltic mastic and supported at the lower edge and at horizontal joints by metal angles. All joints on exteriors should be 1/16", buttered and pointed with joint cement. For full details, contact a Libbey·Owens·Ford Distributor listed in the classified section of the telephone directory, or your nearest L·O·F district office (see below).

USES *Vitrolite* is especially suitable for wall facing in bathrooms, kitchens, breakfast rooms and powder rooms. Also for window stools and splash panels for sinks. Ideal for storefronts and many uses in public buildings and industrial plants. *®

LIST OF DISTRICT OFFICES

Atlanta, Ga.	Lamar 0066	Detroit, Mich.	Trinity 5-0080	New York, N. Y.	Eld. 5-1025
Boston, Mass.	Hubbard 2-0100	Indianapolis, Ind.	Franklin 1363	Philadelphia, Pa.	Penny. 5-8666
Buffalo, N. Y.	Cleve. 0291	Kansas City, Mo.	Victor 5360	Richmond, Va.	3-3034
Chicago, Ill.	Central 6-2490	Los Angeles, Cal.	Michigan 0854	St. Louis, Mo.	Central 9863
Cincinnati, O.	Main 6174	Memphis, Tenn.	37-7589	San Francisco, Cal.	Sutter 1-4360
Cleveland, O.	Main 7180	Milwaukee, Wisc.	Broadway 2-5704	Seattle, Wash.	Seneca 2513
Dallas, Tex.	Riverside 4026	Minneapolis, Minn.	Main 8429	Toledo, O.	Main 5291
Denver, Colo.	Tabor 8015			Washington, D. C.	Republic 4472

Libbey·Owens·Ford Glass Company, Toledo, Ohio *A Great Name in Glass*

Cutting and Installation

For detailed instructions on cutting and installing safety glass ask your glass distributor.

PATTERNED & WIRE GLASS

Various types of patterned and wire glass have been handled by lumber and building material dealers for many years. At one time there were relatively few patterns, which were used rather indiscriminately, chiefly to obscure vision. Since then, however, great strides have been made in the design and application of patterned glasses. There is now a pattern or type of glass scientifically designed to meet every need of light transmission and diffusion. Also many new patterns have been introduced to produce a modern, decorative effect.

In addition to the plain fire finish, with which the glass emerges from the forming rolls, patterned glasses can be obtained with other types of surface processing:

Frosting—primarily a functional treatment of the glass surfaces achieved by acid etching to improve the distribution of light.

Sandblasting—another surface treatment. This also enhances obscurity of the glass and spreads light in a circular pattern.

Sandblasting on one surface reduces light transmission about 16%, and 20% to 30% when applied to both surfaces, depending on type of glass.

Heat Tempering

Most patterns can be heat-tempered to resist certain types of impact and thermal shock.

WIRE GLASS

Several of the patterns already mentioned can be obtained in wire glass to be used where extra strength and a fire retardant glass is required. Wire glass is made by a continuous rolling process in which the wire, previously chromium dipped to insure clean wire and to improve adhesion to the glass, is embedded as closely to the center of the glass as possible.

The rules of the National Board of Fire Underwriters limit the size of wire glass which can be glazed in openings exposed to fire hazard. In no case shall the unsupported area of the glass measure more than 48 inches in either dimension or exceed 720 square inches. Typical maximum sizes would be 15 x 48, 18 x 40, 20 x 36, and 24 x 30.

Polished wire glass is ground and polished on both surfaces by a process similar to that used in making plate glass. As a result, maximum vision and minimum distortion are obtained.

PROCESSING

Most types of flat glass can be obtained with various types of processing. One or both surfaces may be sandblasted—either over-all or to designs—and in several textures and depths. The same applies to structural glass which, in addition, may be inlaid with glass of another color.

Glass may be obtained with a variety of edge finish such as ground, ground and polished, penciled (half round), mitered and bevelled.

Glass may also be obtained cut to pattern shapes, drilled, notched, and with finger pulls.

With the exception of tempered glass, which must have all processing done at the factory before heat treating, most processing is performed by the glass distributor. Your glass distributor can give you detailed information on processing. He can also furnish you information on measuring, estimating, ordering and installing bent glass. All forms of flat glass, except tempered plate, can be bent, but this is a specialized field requiring your glass distributor's expert advice.

CUTTING

Plate glass in larger sizes and several other types of glass will undoubtedly be ordered cut to size from your glass distributor. But window glass and some patterned glass will be cut to size by the lumber and building material dealer. The manner in which this cutting operation is carried out affects profits. Here are some suggestions:

Carry an adequate assortment of sizes in window glass. This reduces cutting loss or wastage. Maintain easily accessible bins clearly marked as to size and keep them as well filled as you can. This will make it possible and convenient to select the most economical size from which to cut the required light.

Never try to cut glass on an uneven or unstable, makeshift surface. Have a good, firm, flat cutting table, reserved for glass cutting only. The top should be covered with heavy felt or carpeting. Keep your table clean at all times; brush off small particles of glass to prevent their scratching the light you are cutting.

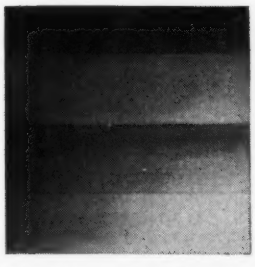
Secure good glass-squares and hooked rules. Keep them hung up where they will not be damaged when not in use. Use the best wheel cutter you can buy. It will save you money. Grasp the cutter firmly and make a clean straight cut with a free motion and with the bottom edge of the cutter parallel with the surface of the glass. Judge your cut by the "sing" of the cutter so as to get the right pressure. Never run the cutter over the same spot twice. Don't make a "white" cut nor one which flakes.

Snap the glass, after cutting. If the cut is near the edge, use a pair of good glass pliers—not mechanics pliers—keeping the lips of the pliers close to the cutter mark.

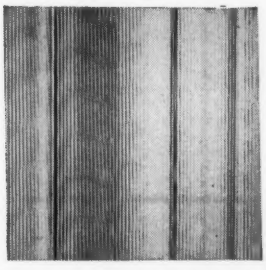
When you have finished, check your light for correct size, return tools to proper places, put cutter in can or jar of light oil. If cutter has started skipping break the

THE FIVE patterns illustrated on this page are suitable for decorative effects. They are especially effective for doors, partitions, side lights, screens, illuminated panels, and other decorative purposes.

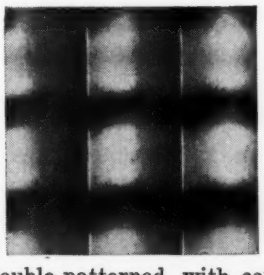
One smooth surface and a patterned side with curved, parallel concave flutes 3/64" deep and ½" crest-to-crest. Approx. light transmission—80%.



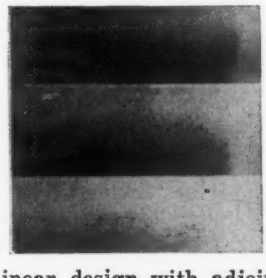
Alternating ascending and descending planes-surface louvers, one inch wide. Fairly transparent; obscurity and diffusion increased with Satinol finish. Approx. light transmission—90.4%.



One smooth and one patterned side with curved, parallel concave waves 3/64" deep and ¾" crest-to-crest with approximately 15 parallel ribs. Approx. light transmission—78%.



Double-patterned, with corrugated design on one side running at right angles to fluted design on the other, creating overall pattern of one-inch squares. Approx. light transmission—87%.



Linear design with adjoining convex flutes one inch wide. Approx. light transmission—89%.

handle in two and throw it away so that it can never be used again and cause breakage.

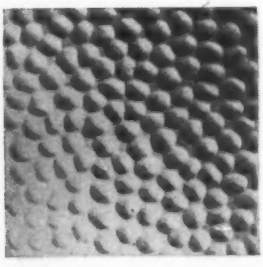
MERCHANDISING GLASS

Many lumber and building material dealers have found that glass can be the source of profitable business. The most successful dealers have also found that it pays to set up a glass department in their sales room. It is best to have the cutting table and neat glass bins on the sales floor where customers can observe the cutting operation and be reminded of their glass needs. Such an arrangement will cause them to remember you when they need glass later.

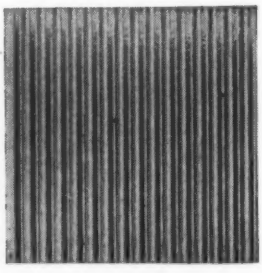
Maintain a floor display in your sales room. Equip several of your sample doors with full length door mirrors. Have on display several small pieces of furniture with glass tops. A sample fireplace with an over-mantel mirror will help sell mantels and hardware as well as mirrors.

Use signs, display material, and mailing pieces which your glass distributor can supply to you. Include glass in your regular advertising and run special glass ads especially just before the fall replacement season. Keep in mind that every customer for other types of material is also a potential glass customer. In many instances bills of material for new construction and remodeling can be

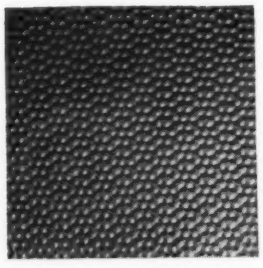
OTHER patterns and their applications are shown on this page.



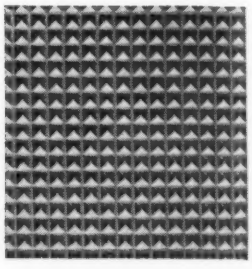
Raised, adjacent lenses diffuse light at moderate angles in all directions. Approx. light transmission: unwired—90%, wired 84%. Uses—interior and exterior industrial glazing.



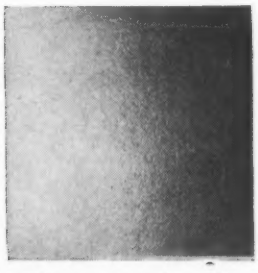
Obscure; 9 parallel ribs per inch; drains off condensation; diffuses light along axis of ribs. Approx. light transmission: unwired—78.9%, wired—72.9%. Uses—Chiefly for skylights; also suitable for general industrial glazing.



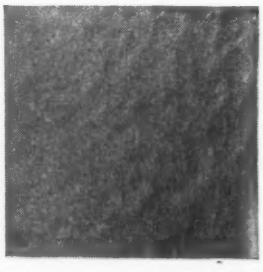
Small grouped lenses, spaced to avoid dirt collection. Gives uniform illumination at moderate angle of diffusion. Approx. light transmission: unwired—87.6% (not made in wired). Uses—Interiors and exterior glazing—transoms, partitions, etc. Very popular for outdoor reflective signs.



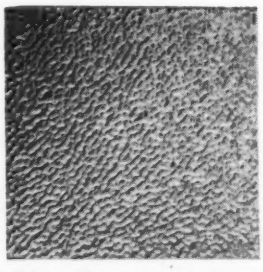
Pyramid-shaped indentations, 64 per sq. in.; gives obscurity and excellent light diffusion in cross-shaped pattern. Approx. light transmission: unwired—52.3% (not made in wired). Uses — General interior glazing; especially suitable for partitions and doors.



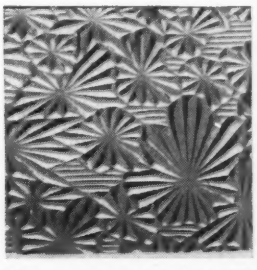
Semi-transparent, with one smooth side and one with multiple bosses creating a fine, stippled appearance. Approx. light transmission: unwired 92.5% (not made in wired). Uses—Interior glazing, also for signs in frosted finest.



Semi-transparent, slightly diffusing overall pattern. Approx. light transmission: unwired—89% (not made in wired). Uses—Interior glazing, partitions, doors, transoms, shower stall doors.

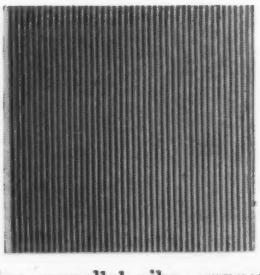


Fairly obscure, finely engraved design for medium light distribution. Approx. light transmission: unwired — 86% (not made in wired). Uses — Widely for interior partitions, doors, transoms, and ceiling lights.

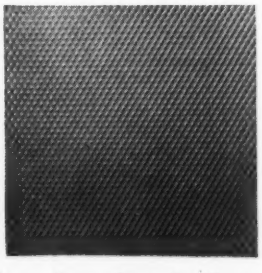


Brilliant floral print without sharp corners and depressions. Approx. light transmission: unwired—86.2% (not made in wired). Uses — interior glazing — partitions, doors, transoms, shower stall doors.

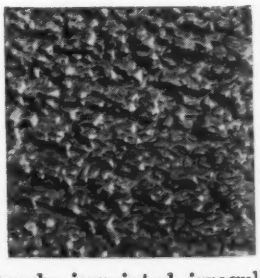
Almost transparent with very fine texture, easy to clean, slight diffusion. Approx. light transmission: unwired — 88.4%, wired — 82.4%.



Fine, parallel ribs, approximately 21 per inch, spreading light in one direction —perpendicularly to ribs; Approx. light transmission: unwired — 84.4%, wired — 78.4%.



Tiny lens-shaped figures give diffusion over a moderate angle; easily cleaned. Approx. light transmission: unwired — 88.2%, wired — 82.2%.



Deeply imprinted irregular pebbled design; highly obscure; brilliant appearance; diffuses light at wide angles. Approx. light transmission: unwired — 79.7% (not made in wired).

Very attractive two color, all steel, dispensing rack. With cutting edge. The most complete all tubular steel rack and will hold seven rolls. Rack has 16" measuring table with inches and feet imprinted on table.

GENUINE EXTRA HEAVY SOL-O-LITE Guaranteed two years. Lets thru 25% more Ultra-Violet Rays than glass. Has 124 strong pre-shrunk threads per sq. inch; impregnated with finest M. P. composition that will not run, melt or discolor.

Ed. Warp's

NOT CONNECTED WITH WARP BROS.

SOL-O-LITE

THE BEST KNOWN WINDOW MATERIALS FOR BUYER CONFIDENCE

NU-VIA GLASS—MADE of a double strength 1/4", tough, strong cord netting, laminated with Buterate Acetate Film and a special prepared Adhesive. The Buterate will last longer and extra high Ultra-Violet Ray transmission. You can be assured Nu-Via Glass with the Buterate Film is the finest window material available.

GLAZ-SCREEN — EITHER IN THE 10 MESH OR 14 MESH WIRE SCREEN, THOROUGHLY imbedded in a high grade Plastic Coating. Transparent—Durable — Pliable and Flexible — Will give years of service. Emits over 60% of the Sun's Ultra-Violet, Vitamin "D" Rays.

SOL-O-LITE —Extra Heavy—Retail Price 49c per sq. yd.

Nu-VIA-GLASS —Transparent—Laminated—Retail Price 56c per sq. yd.

GLAZ-SCREEN —10 Mesh—Bright Galvanized Wire—Retail Price 13c per sq. ft.

GLAZ-SCREEN —14 MESH—Galvanized Wire—Retail Price 16c per sq. ft.

GLAZ-FABRIK —Wax Cloth—High Grade—Retail Price 39c per sq. yd.

GLAZ-FABRIK has 80 pre-shrunk threads per sq. inch, impregnated with 135 M.P. paraffin solution. Admits 25% more Ultra-Violet Rays than glass. Compare, comparison will prove Glaz-Fabrik superior to all materials in the low price field.

SOL-O-LITE MANUFACTURING COMPANY

PIONEERS OF 24 YEARS PRODUCING WINDOW MATERIALS

4301-05 WEST NORTH AVENUE • CHICAGO 39, ILLINOIS

DISTRIBUTED BY RELIABLE JOBBERS EVERYWHERE

increased by the addition of wall, over-mantel, and door mirrors and by glass furniture tops and shelving.

Odd light glazing is profitable business if you are properly equipped. For those customers who wish to make their own replacements, keep packaged putty, glazing points, putty-knives, and glass cutters displayed in your glass department.

No set of merchandising suggestions can fit every individual situation, but there is one important principle which is universally applicable. It is this: glass sales can become important and profitable if they receive careful consideration and planning. A certain amount of glass business will automatically come to you like the demand for nails, cement, and bricks, which everyone takes for granted that you are handling, but to build up your glass volume you must let your customers know that you can supply their glass needs and you must display, advertise, and sell glass aggressively.

GLASS BLOCK

The introduction of structural glass block as a building material is one of the important developments in the building industry. Glass blocks are hollow with a sealed-in dead-air space. They are made by shaping two halves in molds which are then fused together in one block. Glass block laid up in panels take the place of the ordinary window frame and sash. However, panels built of them should never be used to carry loads other than their own weight. While masons lay glass blocks, the method by which they are laid differs greatly from that used for laying brick.

SPECIFICATIONS FOR HEAT ABSORBING GLASS

Product	Uses	Light Diffusion and Obscurity	Pattern	Thickness	Standard *Max. Width and Length	Surface: Fire Polished	Surface: Ground and Polished	Surface: Frosted** Max. Width and Length	Approx. Weight Sq. Ft. Lbs.
figured glass									
Hammered	For windows, skylights and transoms to substantially reduce sun's heat, admit daylight and improve illumination	Medium	Raised Adjacent Lenses	⅛"	48" x 132"	X		30 x 132	1¾ lbs.
				¼"	48" x 136"	X		30 x 136	3½ lbs.
Ribbed		Medium (Directional Spread)	Fine Parallel Ribs	⅛"	48" x 132"	X		30 x 132	1¾ lbs.
				¼"	48" x 136"	X		30 x 136	3½ lbs.
wire glass									
Hammered	Same as for Heat Absorbing Figured Glass. However, being wired each is a non-scatterable, fire-retardant glass	Medium	Raised Adjacent Lenses	¼"	48" x 144"	X		30 x 144	3½ lbs.
Ribbed		Medium (Directional Spread)	Fine Parallel Ribs	¼"	48" x 144"	X		30 x 144	3½ lbs.
Polished Wire (Hex. Mesh only)		None		¼"	60" x 144"		X		3½ lbs.

*Available up to 60 inches depending upon condition of stocks on hand

**Frosted provides excellent diffusion of light, high degree of obscurity and effective glare reduction.

COMPARATIVE QUALITIES

Thickness and Kind of Glass	Heat: Heat and Light in Sun's Rays	Heat: Heat and Light Reflected from the Glass	Heat: Heat of Sun Absorbed by the Glass	Heat: Total Heat of Sun Entering Room Through Glass: Reradiated by the glass	Heat: Total Heat of Sun Entering Room Through Glass: Transmitted directly through glass	Heat: Total Heat of Sun Entering Room Through Glass: Total heat entering through the glass	Efficiency: Ratio of light transmission to heat passing directly through glass
HAMMERED PATTERN							
⅛" Aklo Glass—Unwired	100.00%	9.60%	56.60%	28.30%	33.80%	62.10%	1.87:1
⅛" Ordinary (Lime) Glass—Unwired	100.00	9.60	3.70	1.85	86.70	88.55	1.03:1
⅛" Frosted Aklo Glass—Unwired	100.00	9.00	68.00	34.00	23.00	57.00	1.87:1
¼" Aklo Glass—Unwired	100.00	9.60	69.70	34.85	20.70	55.55	2.58:1
¼" Ordinary (Lime) Glass—Unwired	100.00	9.60	7.40	3.70	83.00	86.70	1.07:1
¼" Aklo Glass—Wired	100.00	9.60	71.40	35.70	19.00	54.70	2.57:1
¼" Ordinary (Lime) Glass—Wired	100.00	9.60	11.20	5.60	79.20	84.80	1.07:1
¼" Frosted Aklo Glass	100.00	9.00	77 40	38.70	13.60	52.30	2.58:1
RIBBED PATTERN							
⅛" Aklo Glass—Unwired	100.00	8.50	56.50	28.25	35.00	63.25	1.87:1
⅛" Ordinary (Lime) Glass—Unwired	100.00	8.50	3.60	1.80	87.90	89.70	1.03:1
⅛" Frosted Aklo Glass—Unwired	100.00	9.00	68.30	34.15	22.70	56.85	1.87:1
¼" Aklo Glass—Unwired	100.00	8.50	70.80	35.40	20.70	56.10	2.58:1
¼" Ordinary (Lime) Glass—Unwired	100.00	8.50	7.20	3.60	84.30	87.90	1.07:1
¼" Aklo Glass—Wired	100.00	8.50	72.60	36.30	18.90	55.20	2.57:1
¼" Ordinary (Lime) Glass—Wired	100.00	8.50	12.70	6.35	78.80	85.15	1.07:1
¼" Frosted Aklo Glass	100.00	9.00	77.80	38.90	13.20	52.10	2.58:1
FOR COMPARISON ONLY							
⅛" Aklo Glass—Polished	100.00	8.00	54.00	27.00	38.00	65.00	1.87:1
⅛" Ordinary (Lime) Glass—Polished	100.00	8.00	3.70	1.85	88.30	90.15	1.03:1
¼" Aklo Glass—Polished	100.00	8.00	71.00	35.50	21.00	56.50	2.57:1
¼" Ordinary (Lime) Glass—Polished	100.00	8.00	7.50	3.75	84.50	88.25	1.07:1

GLASS CUTTERS

FLETCHER

All FLETCHER "Gold Tip" Cutters have DUO-GROUND wheels carefully ground, honed and tested. Correctly balanced, finger-fitting handles with long reach beveled edge blades make them easy to use. Hard bronze bearings insure more accurate cutting and longer life.

"Gold Tip" cutters are made with four different standard types of wheels plus special types for special cutting. Only FLETCHER Glass Cutters are "Gold Tipped".

Please write for catalog

The FLETCHER-TERRY Co.

SOUTH STREET • FORESTVILLE, CONN.

Give your customers — *home handymen and contractors*—a break. Switch them from messy, short-lived putty to Armstrong's "33" — for glazing wood or metal sash.

This amazing, inexpensive material *stays* E-L-A-S-T-I-C. It expands and contracts with weather changes — *never gets rock-hard;* won't crack, chip or crumble. And so easy to apply! "33" is SMOOTH — not "runny"; not lumpy . . . can be painted immediately after application.

Yes, here's a glazing compound EVERYONE likes. *You will do well to feature it.*

Now Nationally Advertised

This spring seven leading magazines — Better Homes, American Home, etc. — carry advertising on Armstrong's "33" to 8,000,000 homes, and to contractors. Stock "33" — display it! *You will find it a fast-moving, profitable item.* Better order several cases from your jobber now!

POINT-OF-SALE DISPLAY

1-lb. cans come to you packed in attractive 3-color display cases (24 per case). This display on your counter will sell a lot of "33" Glazing Compound. Also available in 2, 5, and 10-lb. containers, and in larger drums.

FREE SAMPLE

ARMSTRONG COMPANY - 4063 S. LASALLE - CHICAGO 9, ILL.

Please send me FREE 1-lb. sample of your "33" E-L-A-S-T-I-C Glazing Compound.

NAME_____

ADDRESS_____

In the sash replacement market there are several factors which help the dealer sell glass block. Repeated expense for painting, caulking and replacement of sash destroyed by condensation and corrosion is eliminated, and cleaning is much simpler. These factors are important particularly in factory work.

Lighting can be controlled to some extent by the proper use of prismatic or light directional glass block, in some instances lighting the interior at some distance from the window. The insulation value of glass block is considerable, helping both heating and cooling loads and inside condensation problems.

Glass block panels are easily erected by regular masons. Metal ties are needed only when the area exceeds 50 square feet.

For interior partitions the set-in-wood glass block partition has a rapidly growing market. Easy and clean to erect, and completely demountable these partitions may be used for temporary or permanent locations. Offices may be rearranged, rest rooms for women can be partitioned off in plants where women are employed.

Partitions to divide living room and dining room or hall, without loss of light, to separate the dinette from the kitchen or to provide a playroom in the basement, can be erected easily without the inconvenience and dirt of plaster or mortar.

PLASTIC GLAZING MATERIALS

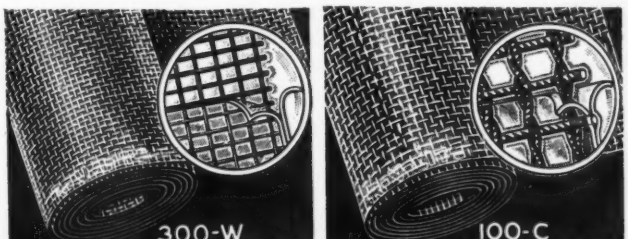
Glass substitutes, or window materials as they are known in the trade, may be employed for many everyday uses—porch enclosures, hog house windows, hot beds, basement windows, etc. These materials, fabricated on a fine wire or cord base, come in several styles, each designed for a particular purpose; some are translucent, others transparent.

CAULKING AND GLAZING COMPOUNDS

There is a tremendous market for glazing and caulking compounds in the building products field, and most dealers carry a complete stock of putty, caulking compounds and guns to supply the demand in their trading area. The use of these materials is not confined to new construction. In fact, their uses in old homes and buildings, both in the city and on the farm, present by far the largest potential.

Present day products have been improved to the point where they provide longer service, more positive seal, and are easily applied by anyone; and the efficiencies afforded by stopping air and water leaks in a structure make them easy items to sell. Manufacturers of these products include complete application instructions with the package, and many provide attractive point of sale displays that help develop a satisfactory volume of consumer business.

MOST dealers find a glazing room is a necessary part of their operations. The above shows an efficient way to stock a wide variety of glass sizes in a comparatively small space.



PLASTIC window materials have wide usage, both on the home and farm. Above shows cotton and wire reinforced construction. It is also supplied with plastic reinforcing.

SPECIAL jig, left, is used to hold each glass block while its vertical mortar joints are applied. While one laborer, right, unpacks and prepares an eight-inch glass block for installation, masons true up and level the first course of block.

Section 8

Board Products

THE BUILDING BOARDS most generally stocked by lumber and building products dealers include insulating board, asbestos cement board, gypsum board, hardboard and laminated wood fibre board. All of these products have a common characteristic—they can be used to cover large areas quickly and easily with maximum ease of handling. Each one has individual qualities, however, which recommend it for certain uses.

The tremendous strides made in developing and improving building boards in recent years are reflected in the fact that these items now share an important percentage in the building products merchant's total sales.

While production figures for building boards include both regular-size sheets and companion products fabricated from the same type of materials, the dealer has been accustomed to thinking of "building boards" only in terms of the large, square-edge, general-purpose sheets that their name indicates. Gradually the dealer is broadening this classification to include tile board and special panels (manufactured with bases of hardboard, insulating board, fibre board, asbestos-cement board, metals, plastic, etc. on which are imposed highly polished and easily cleaned surface materials) as well as sheathing, lath, decorative plan roof insulation and other items fabricated from basic building board materials.

INSULATING BOARD

Although insulating board is, of course, a form of insulation, it is primarily used as a board product (with its insulating properties adding plus values to its use as a board). For that reason, it is included and discussed fully in this Board Products Section.

Insulating board, sometimes known as rigid insulation or structural insulation, is manufactured from vegetable fibers. Those commonly used include wood, bagasse (sugar cane stalks), and corn stalks. It is low in density, soft to the touch, light in weight but high in tensile strength.

The first step in making insulating board is to reduce the raw material to a pulp. The fibers then are cooked and washed. The cooking dissolves the soluble matter and the washing removes it. The clean fibers next are chemically treated with waterproofing materials. The loose fibers then are formed over large rolls or in molds into large, coherent sheets. The final steps are removing any remaining water from the sheets by means of driers and cutting and trimming the boards to the finished sizes.

Within and between the fibers of the completed board are millions of entrapped air voids. They serve to effectively retard the passage of heat. This quality gives the board its name. Insulating board of production line dryness has a thermal conductivity of 0.33. The natural interlacing and interweaving of the fibers and their subsequent shrinkage during the drying process knits them firmly together and forms a grainless board of high tensile strength and stiffness.

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INSULATING BUILDING BOARD

Insulating building board is a general purpose product, made with square or beveled edges. It is produced with the natural finish on both sides and also with a natural finish on one side and a colored surface (usually white or a light pastel) on the other. The top surface is sometimes textured; insulating board combines efficient insulating properties with sufficient strength to permit its use as a structural material.

Size: Insulating building board is made four feet wide and in lengths of 6, 7, 8, 9, 10 and 12 feet (not all manufacturers make all lengths). The common thickness is one-half inch, but it also is made in ¾-inch and one-inch thicknesses.

Colors: The natural board may be gray, tan or brown, depending upon the raw materials used. White or ivory is the factory-finish most commonly applied. Green, buff, and other colors are sometimes available.

Packaging: Six pieces usually make up a bundle. The approximate weight per 1,000 square feet is 760 pounds.

Uses of Insulating Building Board

Interior Finish: Insulating building board is widely used where a rigid, light-weight, easy-to-handle utility board is desired. Applied to walls and ceilings it provides a beautiful interior finish. It is equally as effective used over existing finishes or in new construction. The standard colors form harmonious backgrounds for almost any decorative plan. If desired, the board may be stained, painted, stenciled or carved.

Heat-Saving Applications in Homes: Here are some of the places insulating board can be applied to save heat in both old and new homes: behind radiators located against outside walls; on back of doors to attic or as a trap door over attic stairway; on back of storm doors and garage doors; on upper sash of windows hidden by window shade; in archway partitions to close off rooms not used in winter; over fireplace openings (as a screen) where fireplace is not in use; over radiators in unused rooms.

Miscellaneous: The composition of insulating board makes it an excellent material for bulletin boards of all kinds. Its resiliency adapts it for use as a pad under rugs and as a floor cushion for work areas in basements and other rooms having hard surfaced floors.

Building board is recommended for constructing partitions of all kinds. It makes an efficient sheathing in instances where standard thickness (25/32-inch) is not required. When placed between rough and finished flooring it provides insulation and helps reduce the passage of sound.

Insulating board, in addition to its use as an interior finish, can be utilized in many ways in new construction. Some of these uses are:

To enclose the contractor's temporary shack.
As insulating strips under radiant heating pipes in concrete floor slabs.
As insulating strips between foundation walls and concrete floor slabs.
To reduce sound transmission in floors (used under subfloor or between finish floor and subfloor).
To reduce sound transmission in walls (applied to single walls or between double partition walls).
To obtain added insulation (used in back of radiators recessed into outside walls; also against inside of sheathing and in back of cold air returns in outside walls).
To build ceiling and partition walls for basement storages.

HANDLING INSULATING BUILDING BOARD

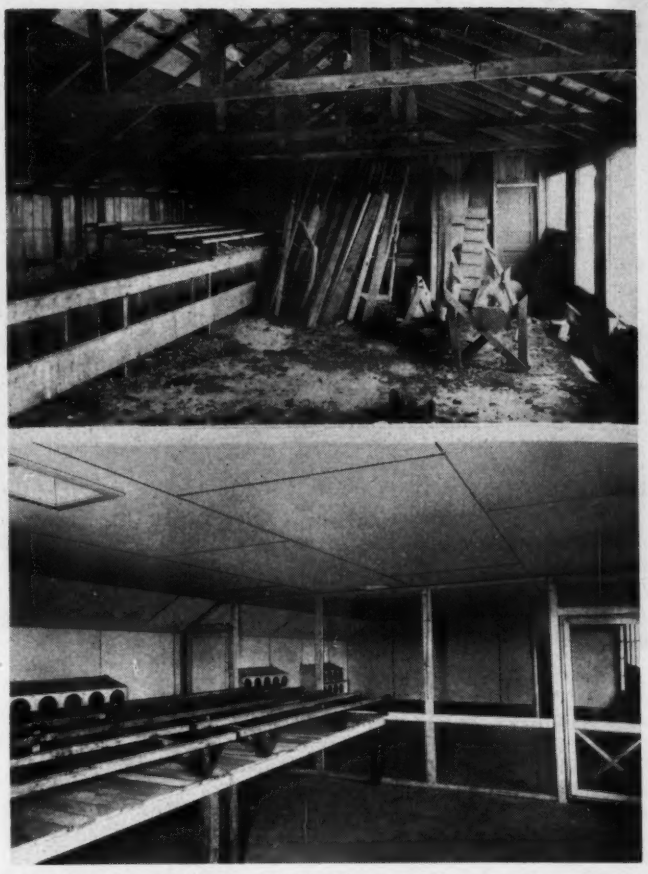
Application

Proper application of insulating board is important and the specific instructions of the manufacturer should be followed. The following details of application, however, will serve as a general guide.

Insulating building board used as an interior finish may be applied by nailing to framing or furring or by cementing to continuous, smooth surfaces. When attached to a nailing base, the framing should correspond with the size or type of product. The one-half-inch thick board should be installed on not more than 16-inch centers. For farm service building interiors, framing for the ¾-inch or one-inch board may be set on a maximum of 24-inch centers. Headers should be inserted between framing members at the unsupported ends of insulating boards to serve as nailing bases.

For masonry construction, furring strips should be attached to the masonry on centers as described above and the insulating board nailed to the furring strips. Masonry above grade should be waterproofed in the inside before applying furring strips. Masonry walls below grade should be waterproofed on the outside before back filling.

Insulating building board should not be forced into place. The 4-foot wide boards should be installed so as to leave a space of ⅛-inch between adjoining boards and at ends.



APPEARANCE, usefulness and cleanlinsss of farm structures can be quickly and inexpensively improved by finishing the interiors with asbestos cement board.

Most insulating boards are cut scant to allow for this space.

Nails and Nailing

Where nails are to be covered (under battens, etc.), use 1½-inch galvanized shingle nails, galvanized roofing nails or box nails for half-inch thick insulating board. For one-inch thick board use 2-inch galvanized roofing nails or box nails. Where nails are exposed, use 1¼- or 1½-inch finishing nails (as specified by manufacturer) for half-inch board and 1¾- or 2-inch galvanized finishing nails for 1-inch thick board. Finishing nails should be driven at an angle, with the heads set flush with the surface of the board. For farm work, and other locations where a fine finished appearance is not essential, large headed nails should be used even where the nailing is exposed. The use of galvanized or cadmium coated nails will guard against staining due to rust.

Joint Treatments

Where joints are left exposed in finished rooms, the edges of the board should be beveled or covered with wood battens or other mouldings.

Conditioning

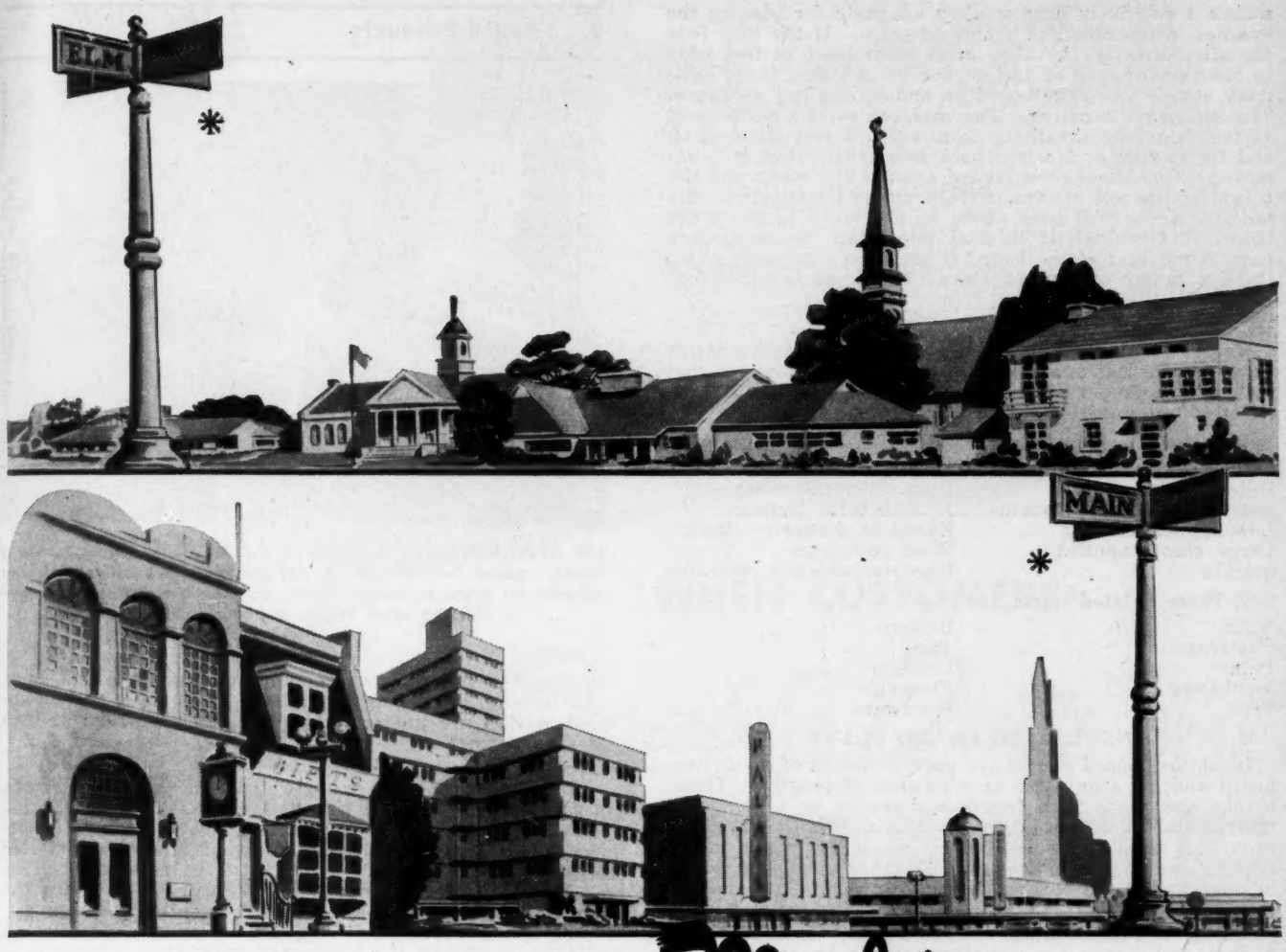
It is recommended that all interior finish insulating boards be placed in the room where they are to be used 24 hours before application. This will permit adjustment of the board to room conditions.

Precautions

Where insulating board is applied to wall surfaces, or used on the outside of studs without any additional exterior finish, it should be protected against damage by abrasion, puncture or poultry pecking. That can be done by covering it to the necessary height with lumber, hardboard, plywood, asbestos cement board or other suitable materials, nailed through to the underlying studs. Materials ordinarily used for exterior siding will protect insulating board applied to the outside of studs.

Storing and Handling

Insulating board should always be stored under cover. Reasonable care should be taken to prevent damaging the board at the corners. A common method of storing is to lay the bundles flat and form piles. One large retailer saves space by storing the boards flat in original bundles in bins set at a 45 degree angle to the loading alleys. This



*ELM OR MAIN, IT'S A Marlite MARKET!

Up Elm Street . . . in homes, schools and churches . . . Down Main Street . . . in stores, theatres, offices, service stations and hospitals ...in every type of building, small or large, old or new, you'll find a ready market for Marlite.

Tap these profitable sales opportunities now, let your prospects plan on Marlite plastic-finished wall and ceiling panels to create beautiful, attractive interiors. The cost of the materials required for a complete Marlite installation has increased less than 15% since 1940, meaning economy for your customers and low-cost inventory for you.

plan on Marlite walls

Marlite

Marlite is the registered trade-name for the original plastic-finished wall and ceiling paneling manufactured only by Marsh Wall Products, Inc.

- EASILY INSTALLED
- FOR NEW CONSTRUCTION OR MODERNIZATION
- EASY TO CLEAN
- WIDE RANGE OF COLORS AND PATTERNS
- NEVER NEEDS REFINISHING

Marlite
PLASTIC-FINISHED
WALL PANELS

MARSH WALL PRODUCTS, INC.
441 Main St., Dover Ohio

for Creating Beautiful Interiors

PLAN ON THESE MARSH PRODUCTS, TOO!

MOULDINGS—
Aluminum Alloy, Colored Presdwood and Modern Plastic, in types and designs for every need. Marsh Mouldings make every wallboard installation a beautiful, finished job.

ADHESIVES—
For a perfect, lasting installation. Scientifically compounded, spreads easily, waterproof.

BATHROOM ACCESSORIES—
Sparkling chrome accessories that add a final touch of dignified beauty to any bathroom. Modern design, easily installed.

makes a relatively narrow alley adequate for placing the bundles in the bins and removing them. If the bins face the alley directly, the alley must be at least 14 feet wide to handle packages of 12-foot board. Another large company stands the large board on end in original packages. This simplifies handling. Two men can raise a package of 12-foot board or sheathing from a truck and stand it on end for storing or lower it back to a truck when it is removed. One package is leaned against the other and the height of the pile always is the same as the length of the board. Mechanical lifts would be necessary to stack the board 12 feet high if it were piled flat. Some dealers have found that if the board is stored on the long edges there is danger of damage when it is pushed or pulled into the bin.

Display

One of the largest retailers of insulating building board recommends that the board be displayed in large sheets, rather than in small sample sections. The size of the sheets often suggests new uses to the customer.

Selling Points (Consumer Benefits) for Insulating Board

Structural rigidity	More quiet—less noise
Bracing strength	Practically no waste
Insulates which it sheaths	Architectural beauty
Low application cost	Excellent decorative taste
Large sheets applied quickly	Wind resistance
	Insulates which it decorates

Sell These Related Items

Nails	Battens
Fasteners	Tape
Paint	Lattice
Mouldings	Furring
Trim	Hardware

INSULATING BOARD PLANK

Insulating board planks are narrow widths of insulating board and are obtainable in a number of lengths. These planks are made with tongue-and-groove or other joint treatments which conceal the nailheads. Planks are most commonly used for walls, but they can be utilized effectively alone or in combination with other insulating board interior finishes to build ceilings.

Sizes: 8, 10, 12 and 16 inches wide; 6, 8, 10 and 12 feet long. Usual thickness: one-half inch. Thicknesses of ¾-inch and 1-inch are sometimes made by some manufacturers.

Colors: White, ivory, various pastel colors and blends.

Packaging: Usually 12 pieces to a bundle.

Storage and Handling: Similar to other insulating board products.

Application

Insulating board planks may be applied either vertically or horizontally with equal success. Applied vertically, in random widths, they simulate Early American painted paneling, at the same time helping to create the illusion of additional height in a room. Applied horizontally, they form a wall which makes a suitable background for a modern interior and also helps to make a small room look wider and longer. They can be applied by nailing to a sound wood lining or to furring strips placed on suitable centers, or they may be cemented to smooth, even walls in good condition. Application by cementing should be confined to experienced workmen. The planks should fit snugly together but never forced into place. Nailing strips should be on centers as specified by the manufacturer. It is recommended that planks be conditioned by opening the package and allowing them to stand for 24 hours before erection for adjustment to atmospheric conditions.

Uses

As a wall or ceiling interior finish, as suggested under uses for tileboards.

INSULATING BOARD SHEATHING

Insulating board sheathing is made of wood, cane or other vegetable fiber in the manner of other insulating board products. Various supplementary waterproofing treatments, such as asphalt coating or integral treatment with asphalt, are used with some of the sheathings for additional weather protection.

This product performs four services. It builds, it braces, it insulates and it stops wind. Produced in large, easy to handle units, it can be applied quickly and with minimum waste.

Size

Most insulating board sheathing is made in two widths —four feet and two feet. The four-foot wide boards are produced in two thicknesses, 25/32-inch and one-half inch, and in lengths ranging from eight to 12 feet. The two-foot widths are made only in a thickness of 25/32-inch and a length of eight feet.

***THE DEVELOPMENT** of insulating board in plank shapes, with a factory applied decorative finish, has provided an excellent finishing material for attics, recreation rooms, etc. Random width planks give a pleasing effect in the bedroom study above.*

Uses

As a wall sheathing, insulating board sheathing can be used under the wood siding shingles, stucco or brick veneer. It also can be used on pitched roofs. If the roofing is to be wood shingles or slate wood, strips are installed to receive the roofing. Other types of roofing, such as asphalt shingles, roll or metal roofing or tile require the installation of solid wood sheathing over the insulation.

Insulating board sheathing is also recommended as an exterior surfacing for temporary structures. After it is applied to the framing, battens and wood trim are applied over the boards. The asphalt treated surfaces can be painted for additional weather protection with paints recommended by the sheathing manufacturers.

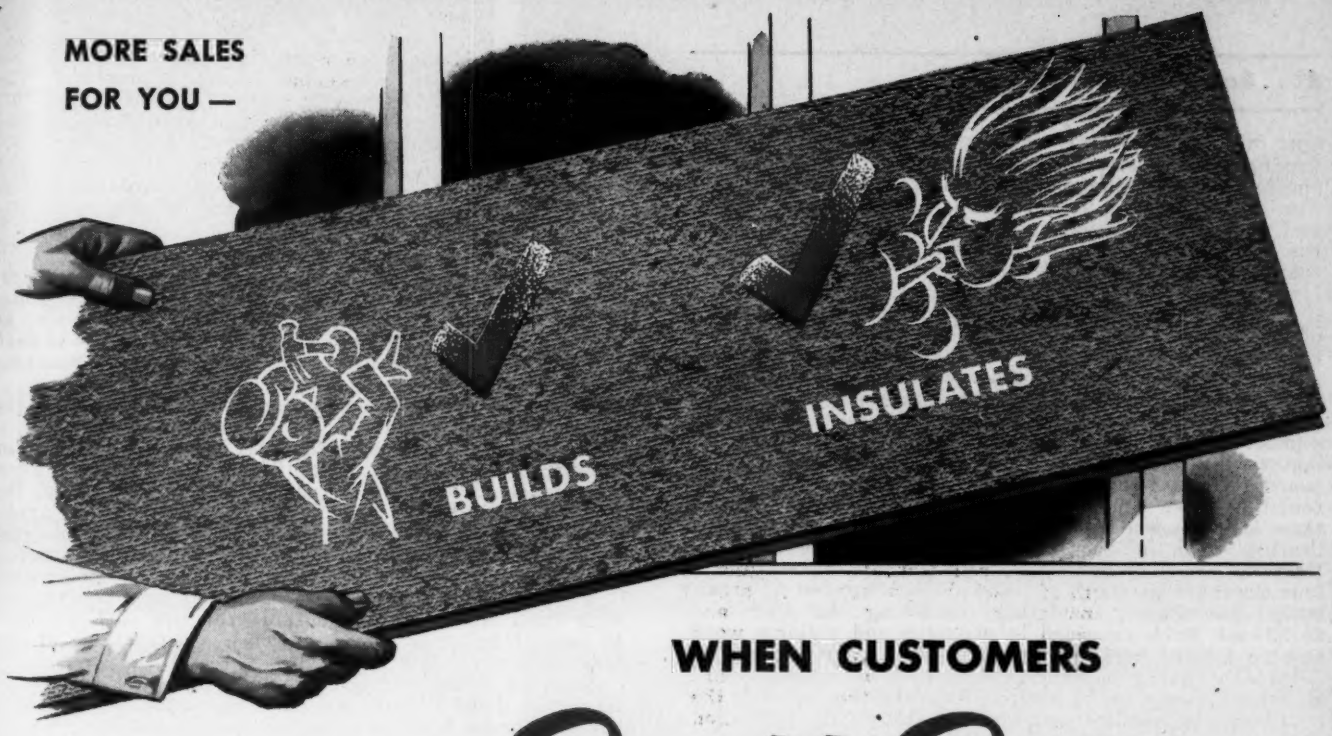
One type of insulation board sheathing, manufactured in large panels up to 8x14 feet is integrally waterproofed to the extent that it is a weatherproof material and can be used for the exterior covering of poultry houses and farm utility buildings of all types. Because of its strength, the board may be bent to moderate curvature without breaking or steamed and bent to sharp curvature.

Application

The procedure for applying insulating board sheathing is in general the same as that for wood sheathing, there being a few minor respects in which the methods differ. Studs should be erected as in ordinary frame construction on 12 or 16-inch centers and two by four headers inserted between framing members at the ends of all insulating boards to serve as a nailing base. Use 2-inch galvanized nails with ⅜-inch or ½-inch heads, or 8d common nails for 25/32-inch insulating board. For ½-inch board use 1½-inch galvanized roofing nails with ⅜-inch heads. Apply the large insulating board units lengthwise (vertically) and directly to all framing members, with ample bearing for nailing along all edges. Nail to intermediate framing members first, spacing nails 6 inches apart; and then along the edges, spacing nails 3 inches apart and ⅜-inch in from the edge. Drive nails until the heads are flush with the surface of the insulating board.

Never force insulating boards in place. Leave a ⅛-inch space between adjoining boards and at ends of boards. Most insulating boards are cut scant in width and length to allow for this space. Where 2-foot by 8-foot sheathing is used, it should be applied horizontally in accordance with manufacturers' specifications. Bring sheathing into close contact with frame around windows. Certain boards should be moistened lightly in dry weather, the day before application, as directed by the manufacturer. Flash windows, doors and other cased openings with strips of metal or prepared roofing.

Wood siding may be applied directly over the insulating board, nailing through to the studs. Siding boards should

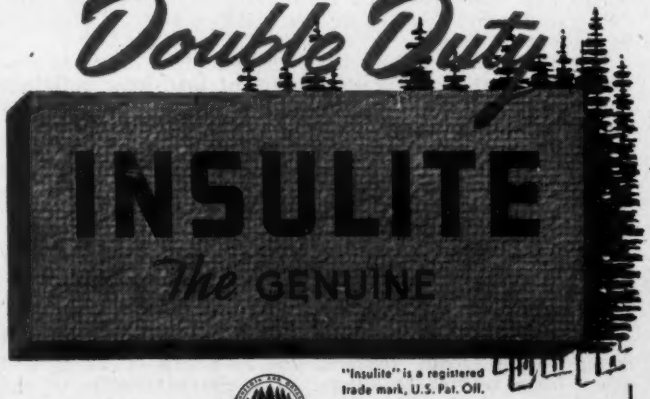


WHEN CUSTOMERS

BUILD THE *Double Duty* WAY

WITH INSULITE

Repeat business as well as new business is built on quality product sales. Double-Duty INSULITE gives the satisfaction that brings re-orders and repeat business. It *builds* and *insulates* in one application. Bildrite Sheathing provides bracing strength superior to ordinary wood sheathing. Your customers like it, your sales get bigger, your profits steadily better. For more repeat business, sell INSULITE (Bildrite) Sheathing, INSULITE Sealed Lok-Joint Lath and INSULITE Interior Finishes. (INSULITE is now readily available.)



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butt over studs Where shingles are to be used, nail 1x2 furring strips horizontally over insulating board to studs, spacing to fit the shingles. Nail shingles to furring strips. For brick or stone veneer, properly space anchors and nail through the insulating board into the studs. Lay the brick or stone in the usual manner. Allow not less than ½-inch space between the insulating board and the brick or stone. If stucco is to be used as exterior finish, it is generally considered good practice to apply a layer of asphalt saturated roofing felt over all surfaces to receive stucco. Self-furring and non-furring stucco bases should be applied in accordance with the manufacturers' specifications. The resistance to distortion of wall sections sheathed with insulating board has been tested in a number of laboratories. As would be expected, the bracing strength increases with the width and thickness of the board. The 2x8-foot sheathing, horizontally applied, was found to have considerably more strength and rigidity than 1x8-inch wood shiplap, applied horizontally without bracing. The 4x8-foot insulating board in the half-inch thickness, applied vertically, had more than two and a half times the strength of wood shiplap, applied as previously described. Insulating sheathing 4x8-feet and 25/32-inch thick exceeded in strength and rigidity wood shiplap applied horizontally with let-in bracing.

Building paper is not required over insulating board sheathing, except under stucco. This and the fact that the board can be handled and nailed quickly cut application costs.

Storage and Handling

(See insulating building board.)

INSULATING TILE BOARD

As the name indicates, tileboards are comparatively small squares and rectangles. They are produced in a number of colors and surface textures. The variety of shapes and colors make them adaptable to many different designs. Tileboards are particularly suited for ceilings, although they are sometimes used to obtain unusual effects on sidewalls.

Sizes: Insulating tileboards are commonly made one-half inch thick and in panels 12x12, 12x24, 16x16, and 16x32 inches. Some manufacturers produce these sizes in ¾-inch and 1-inch thicknesses. Larger tiles also are produced by some companies.

Colors: White, ivory, pastel colors and blends.

Packaging: Varies with manufacturers. Approximate weight per 1000 square feet: 775 pounds.

Storage and Handling: Similar to insulating building board.

Application

The general instructions for handling insulating building board apply to tileboard. In new construction, properly spaced wood framing or furring is necessary. In remodeling, the units may be applied by means of adhesives or nailing, or by a combination of the two, directly over old plaster or other wall coverings.

The design to be followed should be carefully worked out before the first unit is put in place. Where large units are used the use of adhesives for intermediate fastening avoids the necessity of face nailing. It is usually preferable to begin application at the center of the area and continue outward, so that the pattern will work out symmetrically.

Because of the different joint treatments used by various makers, the manufacturer's instructions should be studied before work is begun or before the dealer advises a customer in the application of tileboard.

Uses

Insulating tileboard is both a decorative and insulating interior finish for walls and ceilings. The wide field of use for these tileboards includes basement game rooms, attic bedrooms, libraries, dining rooms and living rooms in private houses and the interiors of churches, schools, restaurants, stores, theaters, offices, recreation halls and other commercial structures.

ASBESTOS CEMENT BOARD

Asbestos cement board is a many purpose building board made of portland cement reinforced with asbestos fibers. It is light gray in color and has a number of individual characteristics which make it particularly suitable for a number of purposes. These include resistance to water, immunity to rust, decay and corrosion, fireproofness and flexibility.

The board is made by combining cement and the asbestos fibers under tremendous hydraulic pressure. The result is a tough board with a smooth, hard finish. Although stonelike in composition and appearance, it can be worked with ordinary hand or power tools.

Size

Standard sheets of asbestos cement board are 4 feet long by 8 feet wide. Thicknesses are ⅛-inch, 3/16-inch, ¼-inch and ⅜-inch.

Uses

Asbestos board has a wide range of uses. The most common are the wall and roof material for portable buildings, as an interior lining for buildings of all kinds, as exterior siding and for partitions. In addition, it is used as a utility board wherever a hard, durable, wear-resistant surface is desired.

The table shows some of the projects for which the board is recommended:

Asbestos cement board does not require any paint or stain to preserve it, but it can be painted or stained when special color effects are required. Prior to painting, the asbestos cement board should be given a generous application of a solution of three pounds of zinc sulphate dissolved in a gallon of water. When the surface is dry it may have become slightly rough from the crystallization of the zinc sulphate and this roughness should be removed with steel wool. Paints suitable for use over concrete or cement material should be used. Instructions of the manufacturer should be followed.

Asbestos board surfaces can be washed with water—by scrubbing down or with a hose—or scarped down with a hoe, on farms, with no damaging or deteriorating effect.

Market

As indicated by the list of suggested uses, asbestos cement board is a highly versatile material. Sales possibilities range from the thousands of squares required by housing contractors to a single sheet for making a poultry feeder.

Home: Home owners and home builders find it particularly suitable for finishing the interiors of laundry rooms, basements, kitchens and bathrooms, where resistance to water, rotting and rust are desired attributes. The industrial field presents excellent opportunities for volume sales. It is used to side hangars, rebuild arched ceilings, encase cylindrical structures, surface interior walls, ceilings and work tables and build washrooms and lockers.

Farm: There are an almost endless variety of uses for the board on farms. It is frequently used for the interior walls and ceilings of dairy barns and milk houses, where sanitation is essential. Health codes usually require that milk houses have interiors which can be kept spotlessly clean—and the washability of asbestos board and its resistance to moisture adapt it to the building of such interiors.

Asbestos board is suited for the building of all types of poultry buildings. It resists the knawing of rodents, which are deadly enemies of young and helpless chicks. The board's hard, smooth surface also eliminates the pecking problem. When other materials are used on the inside of chicken houses, asbestos board is frequently placed over them for peck-proofing. For this use, it should be applied to a height of two feet around the lower walls and back of the roosts.

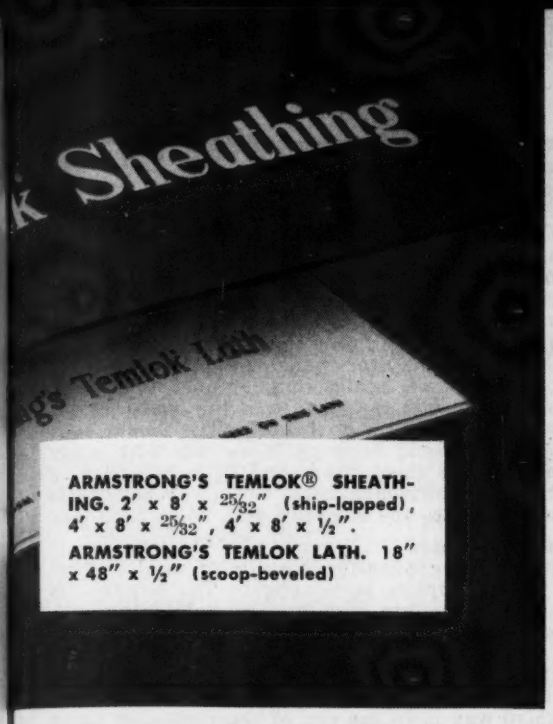
Individual and multiple-unit hog houses can be built by applying asbestos cement board over wood frames. These and other portable farm structures often are prefabricated, or built to order, by building materials dealers in their own shops.

The large sizes in which asbestos cement board is produced adapt it to the construction of low, long buildings such as sheep sheds. Asbestos boards can be used for both sidewalls and roofs on these structures.

Because of its smooth, hard surface, and resistance to rodents and moisture, asbestos board is well suited for the building of grain storages. In building the sidewalls of such storages, the board should be applied to the inside of the framing members.

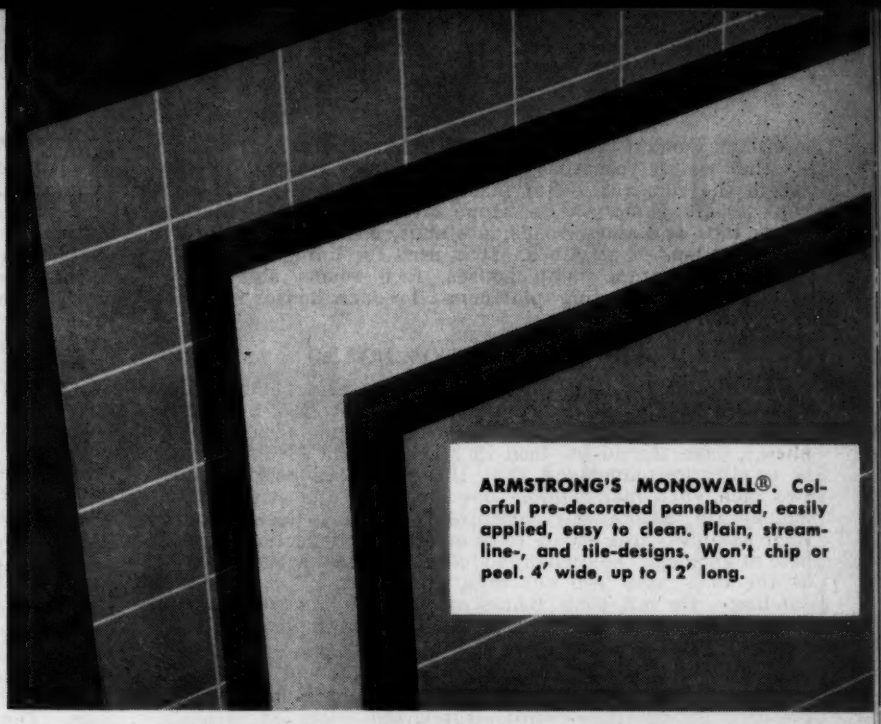
A number of plans for building cattle feeders, poultry feeders, and hog feeders of asbestos cement board have been drawn up by agricultural engineers associated with the manufacturers of the material.

One of the most popular uses for asbestos cement board developed in recent years is the re-siding of barns and other farm service buildings. The characteristics of the board are such that this type of re-siding provides permanent protection. Thirty-two square feet of area (except for lap, if any) are covered with each standard size board, thus permitting a large building to be covered in a

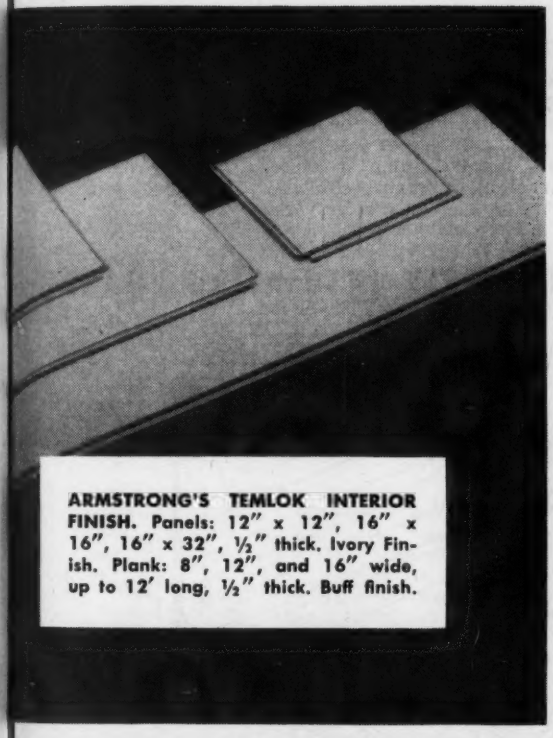


ARMSTRONG'S TEMLOK® SHEATHING. 2′ x 8′ x $^{25}/_{32}$″ (ship-lapped), 4′ x 8′ x $^{25}/_{32}$″, 4′ x 8′ x ½″.

ARMSTRONG'S TEMLOK LATH. 18″ x 48″ x ½″ (scoop-beveled)

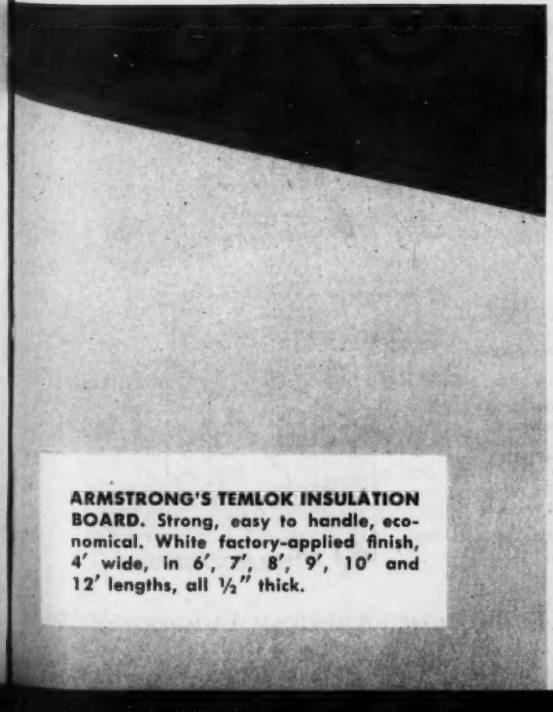


ARMSTRONG'S MONOWALL®. Colorful pre-decorated panelboard, easily applied, easy to clean. Plain, streamline-, and tile-designs. Won't chip or peel. 4′ wide, up to 12′ long.



ARMSTRONG'S TEMLOK INTERIOR FINISH. Panels: 12″ x 12″, 16″ x 16″, 16″ x 32″, ½″ thick. Ivory Finish. Plank: 8″, 12″, and 16″ wide, up to 12′ long, ½″ thick. Buff finish.

ARMSTRONG'S INSULATING WOOL. Made of Fiberglas*, completely enclosed in asphaltic vapor barrier and breather paper. Roll blankets, batt blankets, small batts, pouring wool. *®OCFCorp.



ARMSTRONG'S TEMLOK INSULATION BOARD. Strong, easy to handle, economical. White factory-applied finish, 4′ wide, in 6′, 7′, 8′, 9′, 10′ and 12′ lengths, all ½″ thick.

ARMSTRONG'S HARDBOARDS. Grainless, all-wood panels. Temboard®, Temwood®, Tempered Temwood, Blocked Tempered Temwood, and Patterned Tempered Temwood.

minimum amount of time, with little labor overhead.

Other widely recognized uses of asbestos cement board are in the construction of machine sheds, utility houses, bunk houses, poultry nests, range shelters, ventilator flues, bench tops and sides, roadside stands, outdoor table tops and partitions of all kinds. It is used for lining garages, grain bins, doors, pump houses, feed rooms and feed carts, and for flooring platforms, brooder houses, farm trucks and grain bins.

HANDLING ASBESTOS BOARD

Asbestos board, like other materials, must be treated with reasonable care. It should be protected against impact shocks and dropping while being handled and applied. Care should be used in stacking and loading. It is usually recommended that the sheets be carried by two men, each man holding one long side and stretching out as far as he can comfortably reach. Because of their flexibility, the sheets have much more deflection when held at each end than when held at each side. A sheet held at the ends may slip out of a man's hand due to this bending. Do not drop sheets on the pile but put them down easily and then slide them into proper position.

When asbesos board is stored, in warehouse or on the job, it should not be piled on edge or on end. Before starting a pile, it is usually best to build a flat, tight platform of one-inch boards, supported every 24 inches for piles 6 feet high, every 15 inches for piles from 6 to 10 feet high and every 12 inches from piles over 10 feet high. The platform should be at least an inch wider and an inch longer than the asbestos sheets and should be well supported and braced. When the warehouse floor is cement and it is believed that a platform can be dispensed with, make certain that the floor is carefully swept clean and that it has no irregularities in it. Even when cement floors appear smooth, it is usually wise to cover the cement with a couple of thicknesses of building paper.

Keep asbestos cement board under cover or protect it with building paper or a tarpaulin.

Transporting Asbestos Board

When asbestos cement board is transported by trucks, wagons or railroad cars, a platform on which the piled sheets can be built up should be provided as directed in the previous section on storing. Brace the piles so that the sheets cannot slide. Do not pile lumber, kegs of nails or tools where they can rub against the asbestos board in transit. Unload carefully, taking off only one sheet at a time.

Cutting Asbestos Board

Asbestos board is easy to cut and work. It can be sawed with a 5- or 6-tooth per inch carpenter's cross cut saw. A sharp saw will become dull rapidly at the first and then will do a good job for a long time. The best and quickest way to cut asbestos board is to score it and break it off. Just lay the sheet of asbestos board on a smooth bench or floor, use a straight board for a straight edge, laying it along the line to be cut. Then take any strong, sharp scoring tool—a heavy ice pick, old sharpened file or a sharpened nail—and scratch a deep score on both sides of the sheet along the line of the cut. Then clamp the sheet between two 2x4s or similar, laid along the score, and break off the sheet.

Nailing Asbestos Board

It is important to use the right nails in applying asbestos board. The board is practically everlasting and can outlast the nails that fasten it. For exterior service, select a non-corroding metal or rustproof galvanized nail. Use a non-corroding nail for inside work where dampness, frequent wetting or condensation is likely to occur. On exterior applications open to the weather, exposed nail heads might leak water. Therefore, either use a galvanized lead-headed nail or cover the exposed nail head with a generous amount of gray asbestos putty or a high grade caulking compound.

Nails should be long enough to penetrate well into good sound wood. Barbed or ring shanked nails ordinarily hold better than others. Nails with medium sized heads are satisfactory when asbestos board is applied to a sidewall or vertical surface. Large headed nails should be used when the board is applied to a ceiling. For interior work where inconspicuous nails are necessary, use small countersunk head nails, in a rust-proof finish. For ordinary interior work, for nailing against wood sheathing or studding, use a hot galvanized asbestos shingle nail. In general, select nails having sharp needle points, no larger than 11 or 12 gauge, made of hard material or hardened. Choose nails you would use for hard wood like oak or birch.

Quarter-inch or thinner asbestos board can be nailed easily without preparation. The ⅜-inch sheets should be drilled, or have the holes started for the nails. A starting tool can be made by grinding down a nail-set so it is straight and not tapered. Start nails straight—not cocked at an angle. Drive nail heads snug against the board, but do not sink them into the surface of the board, unless you are using a countersunk head nail. Thick nails (11 or 12 gauge) should be kept ¾ or one inch away from the edge of the sheet. Hardened nails not over 14 gauge thick may be driven a little closer. Where nails must be driven close to the edge-pre-drill holes for them.

Applying Asbestos Board

Three methods of application have been used for exterior work with complete satisfaction. The simplest is to butt the vertical joints and lap the horizontal ones, with the vertical joints covered with asbestos board battens. The second method is to butt the vertical joints, without battens but with waterproofing strips under the joints, and to butt the horizontal joints with metal flashings. The third way is to use one of the connector strips that are on the market.

DECORATIVE ASBESTOS BOARDS

Special asbestos cement boards, produced in colors, have been developed for use as an interior finish for bathrooms and kitchens. These are known as decorative asbestos boards. One kind consists of a base sheet of asbestos board on which an enamel finish is baked, thus providing a smooth, mirror-like finish. Another, and inexpensive,

HOW TO APPLY INSULATING BOARD

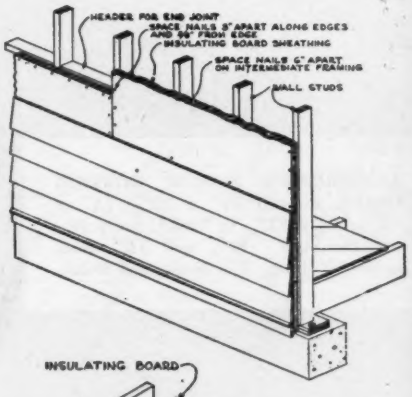

HEADER FOR END JOINT
SPACE NAILS 3" APART ALONG EDGES AND ⅜" FROM EDGE
INSULATING BOARD SHEATHING
SPACE NAILS 6" APART ON INTERMEDIATE FRAMING
WALL STUDS

Fig. 1. Exterior view of frame wall showing application of insulating board sheathing covered with wood siding exterior finish.

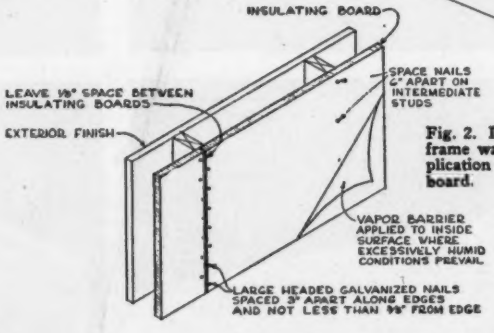

INSULATING BOARD
SPACE NAILS 6" APART ON INTERMEDIATE STUDS
LEAVE ⅛" SPACE BETWEEN INSULATING BOARDS
EXTERIOR FINISH
VAPOR BARRIER APPLIED TO INSIDE SURFACE WHERE EXCESSIVELY HUMID CONDITIONS PREVAIL
LARGE HEADED GALVANIZED NAILS SPACED 3" APART ALONG EDGES AND NOT LESS THAN ⅜" FROM EDGE

Fig. 2. Interior view of frame wall showing application of insulating board.

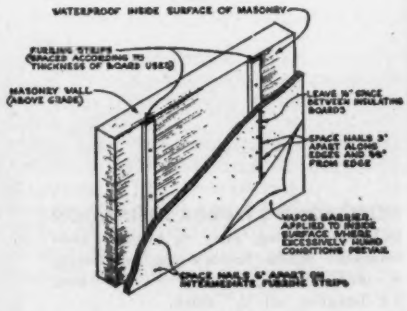

WATERPROOF INSIDE SURFACE OF MASONRY
FURRING STRIPS (SPACED ACCORDING TO THICKNESS OF BOARD USED)
MASONRY WALL (ABOVE GRADE)
LEAVE ⅛" SPACE BETWEEN INSULATING BOARDS
SPACE NAILS 3" APART ALONG EDGES AND ⅜" FROM EDGE
VAPOR BARRIER APPLIED TO INSIDE SURFACE WHERE EXCESSIVELY HUMID CONDITIONS PREVAIL

Fig. 3. Interior view of masonry wall showing application of furring strips and insulating board.

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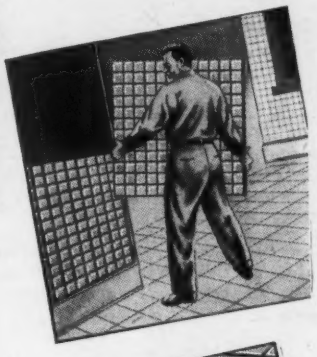

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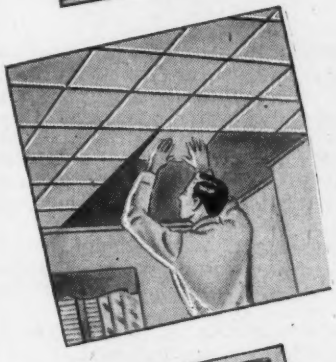

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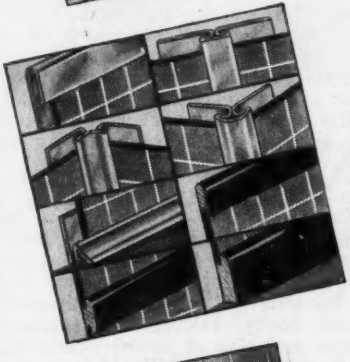

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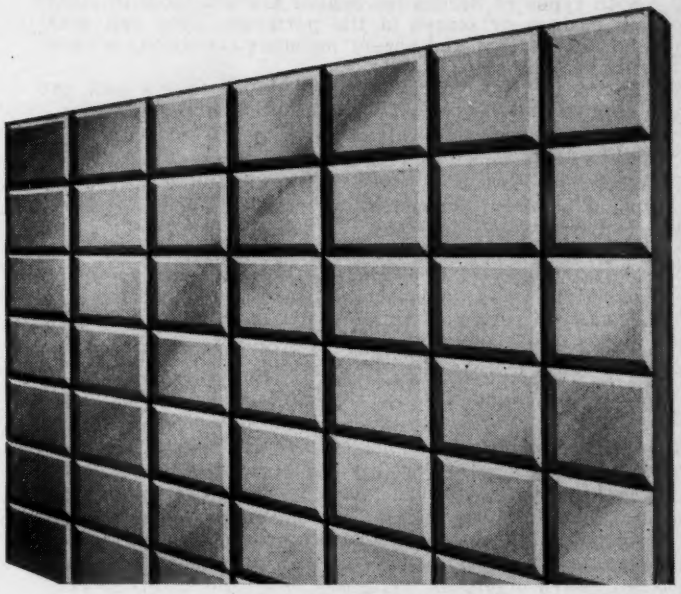

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type is made of asbestos board which has been integrally colored in the manufacturing process.

Both types of decorative boards are available in either plain designs or scored in tile patterns. They can withstand heat, steam and severe moisture conditions without incurring damage.

The decorative boards come in large sheets and can be applied directly over old walls and ceilings.

GYPSUM BOARD

Types

Gypsum board is a sheet material having a core of gypsum between two sheets of paper. There are three basic types.

Lath: The standard gypsum lath is a board ⅜" x 16" x 48"; in some areas it is made ½" thick and also in 32" lengths; on the west coast only a 5/16" thick board is sold. The paper covering of this board is particularly suitable as a gypsum plaster base. It is available in plain sheet form; perforated, each sheet having ¾" holes 4" on centers vertically and horizontally giving additional mechanical keys for plastering; and insulated, which is the plain lath with a sheet of aluminum foil attached to the back side serving as a vapor barrier and heat insulator.

Sheathing: Gypsum sheathing is a board ½" x 2' x 8' (some available in 6'—8" lengths) the paper covering of which is tough and treated to make it water-repellent. Some manufacturers also treat the core material making that water-repellent.

Wallboard—Gypsum wallboard is a rigid sheet material available in ¼", ⅜" and ½" thicknesses, four feet wide and in varying lengths from 8' to 12'. It is manufactured with a highly calendered ivory colored papered face surface made for further decoration; with the face paper scored in a tile effect for use in bathrooms and kitchens; and with special paper having a wood grain surface for use without further decoration. Standard gypsum wallboard may be obtained with edges square, recessed, or beveled; gypsum tileboard comes with square edge only; while predecorated gypsum wallboards have either a square edge or beveled edge. Gypsum wallboard may also be obtained with a sheet of aluminum foil attached to the back side as a vapor barrier and heat insulator.

Uses

Lath is a plaster base for use with gypsum plaster; it should not be used with portland cement plaster nor lime plaster. Insulating lath should be used in exterior walls and top floor ceilings.

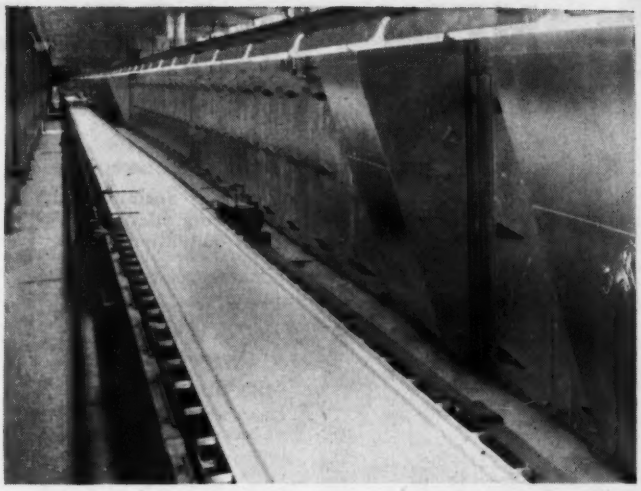
Sheathing is a board product for exterior sheathing under stucco, brick, wood siding, asbestos and wooden shingles. The need of building paper over the sheathing is eliminated by the use of gypsum sheathing, except where building codes specifically require it. Gypsum can be used for roof sheathing in some constructions. In addition to surface water repellent material some manufacturers make the core material water-repellent.

Gypsum wallboard is a sheet material used for interior wall and ceiling surfaces. It is used in new work and also in redecorating and remodeling old work. Different surface treatments are available allowing use without further decoration, or in other cases a choice of painting, calcimining, enameling or papering.

How to Apply, Finish Joints, Decorate

Application: Gypsum lath and sheathing shall be applied across the framing starting from a lower corner on walls and working over and up staggering end joints. Foil back lath shall be used on exterior walls and top floor ceilings only and shall be erected with the foil against the framing. Wood grained and tile wallboard shall be erected vertically on side walls and as required to carry out design in ceilings (preferably across framing). In any case where wood strips or other paneling effects are to be used the erection shall be vertical. In vertical erection where possible use full length boards from floor to ceiling. Wallboards erected to have joints finished and further decorated should be applied horizontally (long dimension across framing). In all cases in erecting gypsum wallboard avoid joints vertically or horizontally extending from corners of doors, windows, or other openings. Avoid having four corners of different boards at one intersection. Do not have joints in wallboard on both sides of a partition on the same stud.

Finishing of Joints: There are two general methods of finishing joints. One is an application of a plastic material to fill in joints smooth and the other the application of a reinforcing strip at the joint (usually a perforated paper strip) on top of the joint material. This strip is embedded tightly against the board and excess surface material scraped off to leave a smooth joint in the plane of the face of the boards. Joints should be treated a second and a third time if necessary to gain a smooth surface across the joints. Nail heads in the field should be spotted with the joint material.



A CONTINUOUS ribbon of gypsum board moves along a factory conveyor belt on the way to the kilns and the cutter that will transform it into thousands of sheets of this highly important construction product.

Where paneled effects are desired, beveled edge board may be used or molding or plain wooden strips may be used to cover joints. For the most pleasing effect these should be spaced regularly in all walls and ceilings.

Decoration: Gypsum wallboard may be used without further decoration after erection or can be painted, calcimined, enameled, or wallpapered. In the case of a standard wallboard job where it is desired to paint the finished walls all joints and nail heads should be sanded smooth before any further treatment. A primer sealer should be used to obtain the best results before painting, while a varnish size is recommended before papering or calcimining.

Construction Pointers

Estimating Coverage: Figure actual surface area to be covered allowing small amounts (5%) for waste in lathing and sheathing. For wallboard working allowance for waste varies considerably with the type finish and the various room sizes. Each job must be carefully estimated to get maximum use of the board, taking into account varying room sizes, openings and size of board available. Manufacturers' directions in this regard will aid in keeping waste to a minimum.

Framing: Good framing is required for a good job. It should be of proper strength, true, properly erected, and spaced a maximum of 16" on center for ⅜" thickness. Where ½" gypsum wallboard is used framing may be 24" on center. Headers should be provided in both planes at interior and exterior angles, for all fixtures, and for all end joints.

Old Plaster: For covering uneven old plaster, nail 1" x 2" furring strips over the plaster to provide proper nailing for ends and intermediate support for boards using 8d nails before applying gypsum wallboard. For covering sound plaster no furring is necessary. In this latter case the use of ¼" gypsum wallboard makes possible the refinishing of walls without removing and replacing trim.

Nails: For lath use ⅜" head, 13 gage, 1⅛" large flathead long diamond-point nails spaced 4" on center. Allow 10 pounds per thousand square foot of lath in estimating.

For sheathing use 7/16" head, 11 gage, 1¾" large hot galvanized roofing nails, space 8" on center. Allow 14 pounds per thousand square foot for estimating.

For ¼" and ⅜" wallboard use 4d, 14 gage, cement-coated regular flat-head nail 1⅜" long. Allow seven pounds per thousand square foot for estimating.

For ½" wallboard use 5d, 13½ gage, cement-coated regular flathead nails 1⅝" long. Allow 10 pounds per thousand square foot for estimating.

THE AMAZING SHEETROCK STORY

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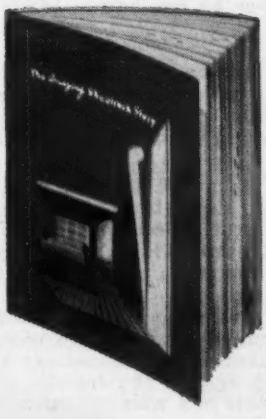

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United States Gypsum

For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint

For wood grain board finishes use matching colored head nails specified by board manufacturer, or 5d finishing nails driven at 45 degree countersunk and covered with spackling compound or plastic wood stained to match finish.

For wallboard work nails shall be spaced 5 inches to 7 inches apart on ceilings and 6 inches to 8 inches apart on walls. Nails shall not be less than ⅜" from edges and ends of any gypsum board.

HARDBOARD

Hardboard is made from fibres much like insulating board and then is compressed under great pressure to make a board of greater density and toughness. The result is a board with a hard, glossy surface which is highly resistant to abrasion and wear.

Sizes

Hardboard is made 4 foot wide and in lengths from 1 foot to 12 foot in ⅛-inch and 3/16-inch thicknesses. It is made ¼-inch and 5/16-inch thick in 12 foot lengths only.

Grades

It is made in two grades—standard or untempered, and tempered. Tempered hardboard is standard hardboard impregnated with a special compound and baked. This tempering process increases the density and strength and, at the same time, makes it highly resistant to moisture in all forms.

Uses

It is used for paneling, shelving, counter and table tops, furniture, partitions, magazines racks and unlimited number of other things. Despite its toughness and density it is worked with ordinary tools.

HARDBOARD TILE BOARD

All-Wood Fiber Hardboard

How Produced: All-wood fiber hardboard is manufactured from exploded wood fiber which is then refined, felted and pressed into board form in heated flatbed hydraulic presses. It is grainless and knotless, has great resistance to moisture and is quite dense.

The tempered grade is produced by impregnating the board with a tempering liquid and then polmerizing (setting the synthetic resins in the liquid, causing them to take hard plastic form) the liquid by baking. This tempering process increases the board's tensile and transverse strength, its resistance to abrasion, and reduces its rate of moisture absorption. In its natural color, the tempered board is a rich brown.

Uses: All-wood fiber hardboard is used largely for interior installations in both new construction and remodeling work. Applied over old walls and ceilings in large panels, it may be left in its natural color or painted. The board is extremely versatile and finds use in scores of miscellaneous items, including trays, table tops, counters, bulletin boards, etc. The tempered board in ¼-inch thickness makes an excellent exterior siding for all types of structures.

Painting and Jointing: Both the standard and tempered grades may be finished with paints suitable for wood. When the tempered grade is used for exterior siding, prime the board and follow the paint manufacturer's specifications for succeeding coats, using a three-coat finish paint job.

Joints may be treated in numerous ways, including metal or decorative wooden mouldings or edge beveling to form a "V" joint. It may be nailed to the existing surface or applied with adhesives.

Tile Board: Tile board made from the tempered grade is produced in 4x12-foot panels, ⅛-inch thick, with indentations forming 4x4-inch squares impressed in the surface. Its combination with metal moulding for joint treatment gives a pleasing and modern effect in bathrooms and kitchens.

PREFINISHED HARDBOARDS

Prefinished hardboards, because of their utility, beauty, and ease of application, have found tremendous consumer acceptance during the past few years and have become an important item to the retail building products dealer.

These products, manufactured by a number of producers, consist of a tempered hardboard base upon which a high gloss, heat-baked surface is permanently integrated. This mirror-like surface, impervious to dirt, grease, moisture, mild acids, alkalies, and stains, makes an extremely attractive wall finish for kitchens, bathrooms, and for other applications where a surface of this kind is desired.

THE BATHROOM above is finished in prefinished hardboard. Dealers have found that a life-like display of these products in their store is hard for the home owner to resist, the products help him visualize just how his own bath or kitchen will appear.

The material is available in a wide variety of colors, plain or scored to simulate tile, and recently in wood grain and marble patterns. Because of its simplicity in installing, prefinished hardboards are equally as adaptable for remodeling old rooms as they are for installation in new construction.

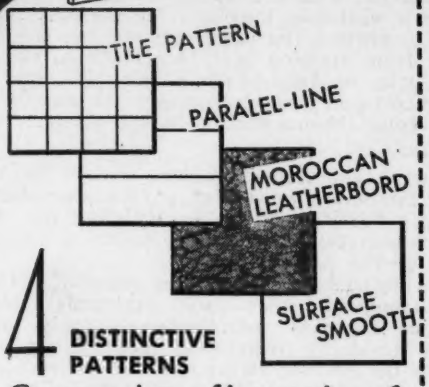
Installation of Prefinished Hardboards: These products are usually installed in connection with chromium or aluminum alloy channels and mouldings that make a "sure-seal" joint, and add to the beauty of the finished job. These are available in a wide selection of shapes, for every type of application.

The prefinished hardboards are easy to cut. Anyone familiar with the use of ordinary woodworking tools can do a highly satisfactory job of installation. That is why a large volume of these products is sold direct to home owners who do the installation work themselves.

There are a few considerations that must be taken into account, however, in order to insure a professional instal-

Wal-lite
DECORATIVE WALL BOARD

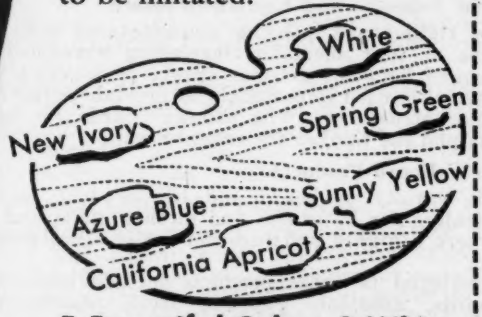
...SETS THE PACE in Quality



4 DISTINCTIVE PATTERNS

Great variety of interesting effects for walls of homes, business buildings and institutions.

This original deep-cut, smooth contour score line adds infinite beauty unequaled by other products. Good enough to be imitated.



5 Beautiful Colors & White

These stock colors meet almost 90% of the consumer preferences. You'll sell more jobs with a smaller, faster turning inventory.

Quality SELLS BETTER

Quality GIVES GREATER PROFITS

Quality SATISFIES MORE CUSTOMERS

More of the better dealers are swinging to *Wal-lite* every day because *Wal-lite* has lived up to its goal of being the highest quality decorative wall board on the market. These dealers find that *Wal-lite* sells better from smaller inventory and with consequent greater profits . . . and greater satisfaction from consumers. Better quality always brings greater success.

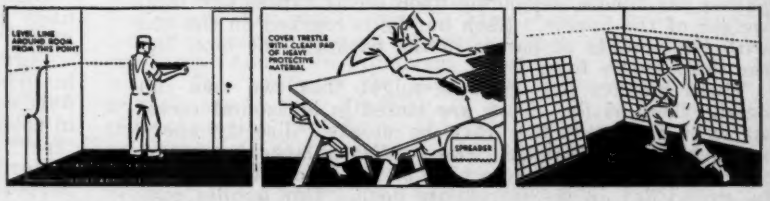
Colors - Patterns - Panel Sizes

Wal-lite concentrates on the five basic color tones and white which are definitely known to satisfy and please a 90% majority of customers. Not too bright . . . not too light . . . but just right to be lived with . . . these delicate pastel colors and white are listed on the left. They are perfectly matched in the three baked surface patterns of Tile Pattern, Parallel-line and Smooth Surface and all are designed for use singly or in a wide variety of combinations.

Moroccan Leatherbord has the most beautiful embossed colored grain surface obtainable anywhere. Blue, Green, Brown, Light Tan and Blue are standard stock colors.

Panel sizes in all patterns and colors are 4′ x 4′, 4′ x 6′ and 4′ x 8′.

Easy to Install



See complete Installation Instruction Sheet on back of panels that reach every job.

FOR MORE COMPLETE INFORMATION — See *WAL-LITE* DEALERS and JOBBERS

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lation job. First, when prefinished hardboard is applied over an existing wall surface, the old wall must be made true and smooth by knocking-off high spots and filling-out low spots with furring.

Next, a level line is drawn around the room at the point where top of sheets will come. This insures a perfectly horizontal joint line. Finally, metal channels are installed, the hardboard is coated on the back with a suitable adhesive and slipped into place.

In kitchens or bathrooms, where the surfaces are exposed to moisture, there is no danger of water seeping behind the panels. The board itself is waterproof, and the mouldings and channels are sealed against water by a special filler.

Prefinished hardboards are generally supplied in 5/32 inch width, and in lengths of from 4 to 12 feet. Also available are colored hardboard mouldings of various sizes and patterns.

LAMINATED WOOD FIBRE BOARD

How Produced

Laminated wood fibre panels are made according to specific manufacturer's formulae and processes. In addition to the different types of wood fibres used, certain chemicals are added in the better grades of board which not only make the product more water resistant, but stiffer and stronger. The individual fibres are fed to and combined in a large disintegrating machine called a beater or hydrapulper—the latter being the latest development in fibre separation. From the beater or hydrapulper, the stock passes through other processing machines to further refine the material. Chemicals are added to make the board suitable for its particular use. The stock or fibres pass through to a forming machine which makes it into a single ply which is dried on a long line of dryer drums. The single ply is then wound into large rolls weighing two to three tons. This material will run from 1/32 to 1/16 inch in thickness. It is approximately 100 inches in width and endless in length.

The single ply rolls are then mounted on stands and the plies are fed through a laminating machine, each ply receiving a coat of adhesive to bind the plies together under great pressure. The laminating machine in a specialized fibre board plant is of special design and is almost entirely automatic in its operation. Just as laminated lumber is stronger and more rigid than a single piece of the same dimension so laminating adds strength and rigidity to fibre panels. In the better types of fibre panels, a coat of priming material is applied to the front and back to reduce painting costs.

Sizes

All thicknesses of wood fibre panels are available 4 feet in width and in lengths from 6 to 16 feet. One manufacturer makes a 6-ply laminated wood fibre panel up to 8 feet in width and average room length.

Laminated panels are also made indented with a tile-like surface. It is marked off into 4 inch squares to represent tile for use on the walls of bathrooms and kitchens.

Handling and Storage

Laminated wood fibre panels are generally wrapped in heavy kraft paper in bundles containing from 6 to 12 panels per bundle, depending upon the thickness and total weight of the bundle. Each bundle is marked on the end with the number of panels in the package, the size, and the total square feet.

These bundles are of such weight that two men can handle them easily. They are stored in horizontal racks, so built that one size may be stocked directly above another. For the dealer who carries a large inventory, such as a carload, separate piles of the different sizes may be stored flat on the warehouse floor. This applies particularly to the more rapid moving sizes such as 4 x 8 and 4 x 10-foot panels.

Uses

The average retail yard stocks the 3/16-inch or 4-ply panel as a general utility product. It is extensively used for making displays in theaters, sign shops, department stores. It is also used for many industrial purposes.

For re-covering existing walls and ceilings in older buildings needing repair and remodeling, ¼-inch or 5-ply, laminated wood fibre panels should be used. The extra strength and rigidity are desirable and necessary, and increases the insulating value of the material. The small added cost is more than justified in the increased value of the product.

For new construction, use 6-ply, full-wall panels. They have efficient insulating value. They eliminate the time and expense of applying panel strips or crack filler. They may be installed regardless of the weather—in winter or in summer. The same carpenters who build the framework of a house or apply the interior trim may also be used to install full-wall panels.

For bathrooms and kitchens, tile-like laminated wood fibre panels may be highly recommended. Correctly applied, they will be as permanent as the framework or the backing to which they are secured. The "double-thick" tile has a smooth, lintless surface which is pre-sized and may be finished with almost any standard make of enamel to give it a washable, long-wearing surface. Care should be used to protect the edges around the tub to prevent moisture from striking in. This material should not be confused with pre-finished tile panels. It comes unfinished, for lower cost and greater economy. It may be finished to meet the color scheme desired by the owner.

Application

In general, the following steps should be followed in applying laminated wood fibre panels over plaster:

1. Apply furring strips directly over the old plaster, on 16-inch centers. Shim all low points to provide a level backing for the panels.
2. Provide backing for all four edges of each panel.
3. Although all other panel materials must be face nailed, one company manufactures special and unique fasteners for doing away with face nailing. These are applied to the furring strips about 8 inches apart. They hold the panels from the back, thus eliminating nail marks as well as the time and expense of countersinking nails and filling the nail holes.
4. Apply cornice around the outer edges of the ceiling. Then apply decorative strips over joints.
5. Duplex mouldings are suggested for the panel strips since they are made of the same material as ¼-inch panels and, therefore, take the same type of finish as the panels themselves. Never recommend lattice strips over panel edges! They are not attractive. They detract from the decoration of the room.
6. Before applying, be sure to read the directions for more detailed application information.

OTHER BOARD PRODUCTS

Mineral Wool Board

An insulation basically mineral wool with a waterproof binding agent. The material is processed to form a strong homogeneous board and cut to accurate size, for use in low temperature rooms.

Laminated Asbestos and Insulating Board

A very rigid board is being manufactured with either two, three or four sheets of insulating board cemented to and bound between exterior sheets of asbestos board. This material is used importantly in pre-fabricated houses and similar structures. The thinner boards for interior partitions and the thicker for exterior walls.

Special Tile-Board Products

A wide variety of board and tile products are now offered dealers for bathroom and kitchen walls and other places where a highly polished and easily cleaned surface is needed.

Base material in these products include hard boards, fibre boards, asbestos, gypsum, steel, aluminum and plastic.

Certain types of asbestos boards are supplied scored in squares of various dimensions, with natural color and finishes or with colors applied in the mix and finishes in colored plastic materials that give the appearance and "feel" of Ceramic Tile.

Hardboard is plastic-finished and patterned for the same purpose and finishes.

Gypsum wallboard is manufactured with a scored surface for the same purpose and finishes.

Steel also is similarly prepared with a highly polished porcelain finish.

Many of the manufacturers provide the same material in plain unscored panels for functional uses.

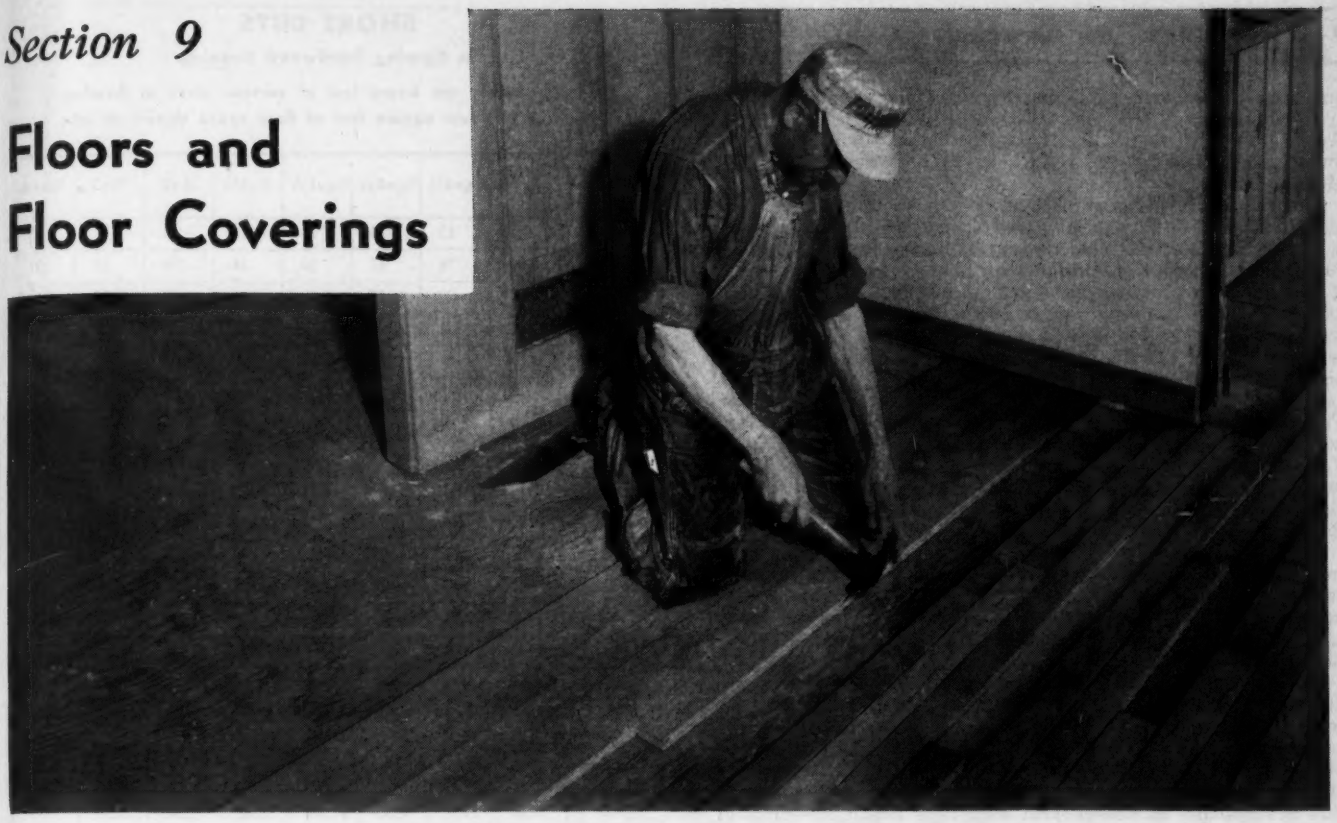
Finishes include wood patterns, marble, wood veneer, horizontal lines, plain and tile patterns.

Many of these products can be sawed and fitted with ordinary carpenter tools.

The manufacturers usually supply moulding and fittings to be installed with the board.

Section 9

Floors and Floor Coverings



EVERY HOME and practically all other building structures require flooring. The sale of flooring is important enough to form a major department in practically all retail lumber and building products stores. Yet, it can be safely said that there is hardly a single dealer who can not boost his sales volume by becoming more familiar with the various types of flooring materials available, where they can be best used, and how they should be finished and maintained.

Equipped with this fundamental information, the dealer is in a position to aggressively merchandise flooring, floor coverings and the many accessory and allied items that are related to the successful performance of a good floor.

The major kinds of flooring and floor coverings fall into two classifications: (1) wood (principally hardwoods) and (2) other materials including asphalt tile, linoleum, rubber tile, etc.

Both hardwoods and softwoods are used for flooring. Softwood flooring is made chiefly in the harder softwood species, such as Douglas fir, southern yellow pine, western larch, etc. Normally at least one of the softwoods and two of the hardwoods are stocked in most yards.

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HARDWOOD FLOORING

Hardwood flooring is made principally from oak, maple, beech, birch and pecan. These are "heavy" hardwoods in contrast to "light" hardwoods like poplar, cottonwood and other species that botanically are classified as hardwoods but, from a physical standpoint, are soft in texture and consequently do not wear as well due to low abrasion resistance. Flooring made from the "heavy" hardwood species mentioned above are used not only in homes but in industrial, commercial and institutional structures as well—wherever durability, ease of maintenance and pleasing appearance are requisites.

Species of Hardwood Flooring

Oak

Twenty varieties of oak are processed into flooring. Except for grouping nine of them as white oak and 11 as red oak, no attempt is made to classify them in commercial practice. In quality and utility there is little difference between the two groups and the grading rules make no distinction. Red oak is more uniform in color and perhaps a little easier to finish. While they may be mixed indiscriminately in order from the mill, flooring of all white oak or all red oak may be obtained at a slightly higher cost for selection.

The beauty of oak is due to two important characteristics of its cellular construction. First, it is one of the few heavy hardwoods that is ring-porous. It is thus described because the springwood of each year's growth has larger and more prominent pores than the summerwood. This produces the attractive figure conspicuous in plain-sawed oak. Secondly, it is marked by strips of cells extending radially in the tree, sometimes as high as 4 inches. Known as wood rays, these cells appear as large flaky figures when the wood is quarter-sawed. Singular in its possession of these prominent wood rays, oak is the only popular flooring hardwood that is quarter-sawed.

Among the advantages of oak flooring (some of which oak shares with other hardwood flooring species) are these: (1) Oak is one of the strongest of the heavy hardwoods. Oak flooring, thus, contributes materially to the structural strength of the building. (2) Quarter-sawed oak flooring is only exceeded by hard maple, beech and birch in wearing qualities, according to tests. (3) Oak neither hardens under cold temperatures nor softens when warm. (4) Oak is quite resilient—a factor that adds to foot ease and human comfort. (5) Variations of shade

and grain, together with distinctive wood rays, form attractive design. (6) Oak flooring is easy to maintain. After years of service, it can be inexpensively reconditioned by sanding and refinishing.

Maple

Although there actually are only two species of this classification—sugar maple and black maple—the wood is known in different localities by various names, including sugar tree and rock maple. Exceptionally hard and strong, it has great resistance to abrasion. Maple is designated as a diffuse-porous wood, since it has no prominent springwood pores. Its pores are very small and evenly distributed. As a result, the wood is close-grained. Having no conspicuous wood rays, it is not produced in quarter-sawed flooring. The heartwood is light reddish brown. The sapwood is white with a slight brownish tinge. Sapwood is not considered a defect in grading of maple. Varying natural colors of the wood are permitted even in the higher grades, although special grades provide for clear white stock and clear brown stock.

Beech

Only one species of beech is produced in this country. In texture, strength, hardness, abrasive resistance and color, it closely resembles birch. Beech flooring is not produced in quarter-sawed stock. Beech flooring is available in special grades selected for color from all red-faced stock.

The difficulty of some dealers and distributors in securing enough maple, beech and birch flooring during the past several years has caused erroneous reports to be circulated that these heavy duty flooring products are not available and will not be available in the future. The Maple Flooring Manufacturers association reports that this assumption is not correct and that maple, beech and birch flooring is very much available and will continue to be produced for years to come. Manufacturer-members of this association produced approximately 50 million feet of maple, beech and birch flooring in 1948.

Birch

Of the dozen or more species of birch grown in the United States, two are utilized for flooring. They are yellow birch and sweet birch, the former being by far the most abundant and widely used. Like maple and beech, birch is a diffuse-porous wood of fine, uniform texture. Hard, heavy and strong, it possesses considerably abrasive resistance. The two species vary only slightly, both having heartwood of reddish brown and sapwood of much lighter color. Certain color variations occur frequently, but these are not considered in grading. Special grades, however, are manufactured from all red-faced stock.

Pecan

Pecan is extremely durable. It belongs to the hickory family, the hardest of all hardwoods. Pecan is close grained and has fine or invisible wood rays. Its heartwood is darker than that of most woods ordinarily used for flooring.

Other Species

Chiefly because of their scarcity and consequent high cost, the other species sometimes used for flooring—walnut, cherry, ash, hickory and East Indian teak—are relatively unimportant. So little is produced that most manufacturers have made no efforts to classify or grade these species. Some flooring producers, however, do specialize in their production. Extremely hard and durable, most of these species have grain patterns which result in strikingly beautiful floors. Usually they are processed into parquetry.

TYPES AND SIZES OF HARDWOOD FLOORING

Most hardwood flooring in the United States is manufactured by mills which specialize in that activity. They are equipped to produce flooring of different styles or types, with the result that a type of hardwood flooring can be obtained to harmonize with any style of architecture or furnishings. Broadly, these types are classified as strip, plank, and pattern or parquet flooring. A fourth type, known as block flooring, is sometimes given a separate classification, although strictly speaking it is a form of parquetry.

Strip Flooring

Strip flooring is the type most extensively used. Practically all species are produced in this form. As the name implies, this type consists of flooring pieces cut to narrow strips of varying thicknesses. The thinner strips are used chiefly in remodeling wherein a new floor is laid over an old. In such cases it may not be expedient to reduce room height by using thick flooring, which also is more expensive. The prime objective, appearance rather than strength, is nevertheless achieved.

Despite its extensive usage, strip flooring should not be considered commonplace, since no two hardwood floors are exactly alike. Each has individuality in character and beauty of grain. Most floors of this type are composed of strips of uniform width. Interesting patterns are formed by use of stock selected for variations in color, mineral streaks or other natural irregularities. Attractive designs also may be achieved by using strips of random widths. Most hardwood strip flooring nowadays is tongued and grooved at the factory, so that each piece joins its neighbor snugly when laid. Square edge strips, however, are available.

A new form of continuous-board, laminated-strip flooring has been perfected

Utilizing cull hardwood strips, the flooring is produced by a new process. The continuous board, measuring 25/32x12 in., can be cut to any length. The board is composed of three glued-laminated layers. The top and bottom plys consist of parallel 3-in. strips crossbanded by the center ply.

Sizes

Strip flooring of oak, maple, beech, birch and pecan is manufactured in a variety of sizes ranging in width

SHORT CUTS

In figuring hardwood flooring

Figures below are board feet of various sizes of flooring required to cover square feet of floor space shown at left.

Square Feet Floor Space	25/32x3¼	25/32x2¾	25/32x2¼	25/32x1½	½x2½	½x2	⅜x2	⅜x1½
10	12	13	13	15	12	12	12	13
20	25	26	27	30	24	25	25	27
30	37	39	40	45	36	38	38	40
40	49	51	53	60	48	50	50	53
50	62	64	67	75	60	63	63	67
60	74	77	80	90	72	75	75	80
70	87	90	93	105	84	88	88	93
80	98	102	107	120	96	100	100	107
90	111	115	120	135	108	113	113	120
100	124	128	133	150	120	125	125	133
200	247	255	267	300	240	250	250	267
300	371	383	400	450	360	375	375	400
400	494	510	533	600	480	500	500	533
500	618	638	667	750	600	625	625	667
600	741	765	800	900	720	750	750	800
700	865	892	933	1050	840	875	875	933
800	988	1020	1067	1200	960	1000	1000	1067
900	1112	1148	1200	1350	1080	1125	1125	1200
1000	1235	1275	1333	1500	1200	1250	1250	1333

No allowance has been made in these figures for cutting waste.

Counted as	1x4	1x3½	1x3	1x2¼	1x3	1x2½	1x2½	1x2
Weight	2250	2125	2000	2000	1500	1300	1000	1000
Size of nails used	8d	8d	8d	8d	5d	5d	4d	4d
Nail spacing	10 to 12 in. on center				8 to 10 in. on center		6 to 8 in. on center	
No. pieces per bundle	8	12	12	12	16	18	24	24
Add to flr. area to obtain BM required	23⅓%	27½%	33⅓%	50%	20%	25%	25%	33⅓%
To obtain BM from Bdl. feet multiply by	2⅔	3½	3	2¼	4	3¼	5	4

HARDWOOD FLOORING

OAK
BEECH
PECAN
ASH
Flooring

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SELMA LD 9910 JACKSON 1885

from 1½ inches to 3¼ inches and in thickness from 5/16-inch to 1⅝ inches. The standard thicknesses for tongued and grooved strip flooring are ½-inch, ⅜-inch and 25/32-inch. Strips of these thicknesses are most commonly used for homes, hence produced in greatest volume and available at lower cost than special thicknesses. The 25/32-inch pieces, most widely employed, are manufactured in five widths: 1½ inches, 2 inches, 2¼ inches, 2¾ inches and 3¼ inches. Most popular is the 2¼-inch width.

Square edge oak strip flooring ordinarily is produced in only two sizes, 5/16 x 1½ inches and 5/16 x 2 inches. Maple, beech, birch and pecan, square-edge, come in two thicknesses, 25/32-inch and 17/16-inch. Widths of 2½ inches and 3½ inches are available in each thickness. Lengths of strips in a bundle of flooring varies according to grade, the highest grade specifying an average length of 5 feet, the lowest 2½ feet. Some strips may be as long as 16 feet.

Plank Flooring

One of the oldest types of hardwood floors, plank flooring dates back to the handicraft era. In its crude early forms it was widely used in medieval Europe, and later became a popular flooring for American colonial homes.

Oak customarily is preferred by those specifying plank floors, so production of them ordinarily is confined to that species. Some manufacturers, however, produce plank flooring in solid walnut and East Indian teak, as well as in various veneers.

Plank floors usually are of random width pieces. Generally the pieces are tongued and grooved, but sometimes they are produced with plain ends. Frequently the edges of planks are beveled to reproduce the effect of the large cracks which characterized early hand-hewn plank floors. The wood pegs by which the old plank floors were fastened also are simulated. This is done by means of wood plugs glued in holes on top of the countersunk screws which actually fasten the planks.

Sizes

Solid planks generally are processed in 25/32-inch thickness, veneers in ⅞-inch. Special thicknesses of 1 1/16 inches for solid and 1⅛ inches for veneer can be manufactured at extra cost, but this is seldom recommended. Widths range from 4 to 9 inches in multiples of 1. Minimum length for certain types is 2 feet, for others 3 feet.

Pattern or Parquet Flooring

Pattern floors, also known as parquet and design floors, appeared as early as the 14th century in Europe. While today, as then, they represent the most elaborate and expensive type of hardwood flooring, they have been simplified to a great extent. Early pattern floors presented bizarre effects which would be incompatible with present architectural styles. Today's parquetry usually assumes

WHEN installing hardwood strip flooring, place a good quality building paper between the subfloor and the finish floor.

geometric patterns such as squares, rectangles and herringbone. Yet an almost infinite variety of effects may be achieved. Literally hundreds of designs are available, many featuring variations of species or of shades of the same species. Most parquet flooring is of oak, although it also is produced in maple, beech, birch, walnut, mahogany, East Indian teak and ebonized wood. The latter consists of dyed white maple or holly.

Parquetry is manufactured in short lengths of individual pieces. Each piece must be cut to exact dimensions so it will match perfectly the dimensions of another piece, or multiples thereof. Customarily tongued and grooved, the pieces are laid separately, either by nailing or setting in mastic.

Parquetry is manufactured principally in 25/32-inch thickness. Most common face width for each piece is 2¼ inches, but width of 1½, 2 and 3 inches can be obtained by special order. Standard lengths are in multiples of face width. For example, in strips 2¼ inches wide, the lengths are 6¾ inches, 9 inches, 11¼ inches, 13½ inches, 15¾ inches and 18 inches.

Block Flooring

Block flooring, as stated above, is really a form of parquetry, since it constitutes a definite pattern. It differs from conventional parquetry in that the pieces are as-

STANDARD SIZES, COUNTS and WEIGHTS

OAK

Nominal	Actual	Counted	Weights M Ft.
TONGUE AND GROOVE-END MATCHED			
25/32x3¼ in.	23/32x3¼ in.	1x4 in.	2250 lbs
25/32x2¼ in.	23/32x2¼ in.	1x3 in.	2000 lbs.
25/32x2 in.	23/32x2 in.	1x2¾ in.	2000 lbs.
25/32x1½ in.	23/32x1½ in	1x2¼ in.	2000 lbs.
3/8x2 in.	11/32x2 in	1x2½ in	1000 lbs.
3/8x1½ in.	11/32x1½ in.	1x2 in.	1000 lbs.
½x2 in.	15/32x2 in.	1x2½ in.	1300 lbs.
½x1½ in.	15/32x1½ in.	1x2 in.	1300 lbs
SQUARE EDGE			
5/16x2 in.	5/16x2 in.	face count	1200 lbs.
5/16x1½ in.	5/16x1½ in.	face count	1200 lbs.

NOTE: Oak, Beech, Birch, Hard Maple and Pecan Flooring are bundled by averaging the lengths. A bundle may include pieces from 6 in. under to 6 in. over the nominal length of the bundle No piece shorter than 9 in. admitted

The percentages under 4 ft. referred to above apply on total footage in any one shipment of the item.

¾-in. allowance shall be added to the tongue on the end matching when measuring the lineal length of each piece.

Flooring shall not be considered of standard grade unless the lumber from which the flooring is manufactured has been properly kiln-dried.

BEECH, BIRCH, HARD MAPLE AND PECAN

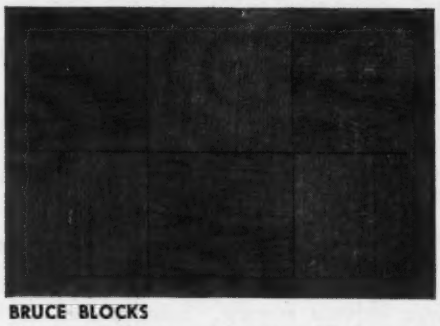
Nominal	Actual	Counted	Weights M Ft.
TONGUE AND GROOVE-END MATCHED			
25/32x3¼ in.	23/32x3¼ in.	1x4 in.	2250 lbs.
25/32x2¼ in.	23/32x2¼ in.	1x3 in.	2000 lbs.
25/32x2 in.	23/32x2 in.	1x2¾ in.	2000 lbs.
25/32x1½ in.	23/32x1½ in.	1x2¼ in.	2000 lbs.
3/8x2 in.	11/32x2 in.	1x2½ in.	1000 lbs.
3/8x1½ in.	11/32x1½ in.	1x2 in.	1000 lbs.
½x2 in.	15/32x2 in.	1x2½ in.	1300 lbs.
½x1½ in.	15/32x1½ in.	1x2 in.	1300 lbs.
SPECIAL THICKNESSES (T and G, End Matched)			
17/16x3¼ in.	33/32x3¼ in.	5/4x4 in.	2400 lbs.
17/16x2¼ in.	33/32x2¼ in.	5/4x3 in.	2250 lbs.
17/16x2 in.	33/32x2 in.	5/4x2¾ in.	2250 lbs.
JOINTED FLOORING—i.e., SQUARE EDGE			
25/32x2½ in.	23/32x2½ in.	1x3 in.	2250 lbs.
25/32x3½ in.	23/32x3½ in.	1x4 in.	2400 lbs.
17/16x2½ in.	33/32x2½ in	5/4x3 in.	2500 lbs.
17/16x3½ in.	33/32x3½ in.	5/4x4 in.	2600 lbs.

BRUCE

Hardwood Flooring • Floor Care Products
Yellow Pine and Hardwood Lumber

BRUCE STRIP FLOORING

Red Oak, White Oak, Maple, Beech, and Pecan strip flooring in all standard sizes and grades. Prefinished or unfinished.



BRUCE BLOCKS

Hardwood flooring in modern block design for installation over concrete slab or wood subfloor. Prefinished or unfinished.

BRUCE RANDOM-WIDTH PLANKS

Solid oak planks in 4", 6", and 8" widths for Colonial, Ranch, and other architectural styles. Mansion, Fireside and Tavern Grades.

BRUCE PINE AND HARDWOOD LUMBER

Yellow pine yard and shed stock, SPA graded. Southern hardwoods—air or kiln dried, rough or surfaced. Also, moulding and trim.

BRUCE FLOOR CARE PRODUCTS

Here's a complete line of quality products for modern floor finishing and maintenance: Bruce Floor Finish, Tuf-Lustre Wax, Finishing Unit, Gymnasium Finish, Floor Cleaner, Paste Wax, Self-Polishing Wax, Doozit Cleaner-Waxer, Linoleum Seal, Asphalt Tile Cleaner. The *Salesmaker* Display, pictured above, makes extra profits for Bruce Dealers.

OTHER BRUCE PRODUCTS

Door Sills, Thresholds, Stair Treads, Risers, Shoe Mould, Ceda'line Closet Lining, Terminix Ventilator, Everbond X Floor Mastic, Terminix Termite Control, Furniture Dimension, and Machined Wood Parts.

ADVERTISED IN LEADING MAGAZINES

Bruce Products are backed by powerful national advertising in Life, Saturday Evening Post, Ladies' Home Journal, Good Housekeeping, Better Homes & Gardens, American Home, House Beautiful. Bruce Hardwood Floors are also advertised to architects in Architectural Forum, Progressive Architecture, Architectural Records; to builders in American Builder and Practical Builder; to floor contractors in Flooring Magazine.

Consult your Bruce sales representative or distributor, or write

E. L. BRUCE CO.

BRUCE

World's Largest Maker of Hardwood Floors

MEMPHIS, TENN.

sembled into square or rectangular blocks at the factory. They are held together by metal splines or other types.

Sizes

Prefabricated blocks are made in thicknesses of ½-inch, 25/32-inch and 33/32-inch. Customary strip widths are 1½, 2, 2¼, 3¼ and 4 inches. All thicknesses are not produced in every width. Dimensions for the completed blocks, of course, are in multiples of the strip widths. Squares assembled from pieces 2¼ inches wide, for instance, usually are 6¾ x 6¾ inches, 9 x 9 inches or 11¼ x 11¼ inches. Rectangular blocks of this strip width customarily are 6¾ x 6¾ inches.

Pre-finished Hardwood Flooring

When hardwood flooring is produced in unfinished form, sanding and other finishing operations are performed after the floor has been installed. Some manufacturers produce flooring which is completely pre-finished at the factory. It is ready for use immediately after being laid. All species and types of hardwood flooring may not be readily available in this form; but a manufacturer equipped to make factory finished flooring usually can furnish it in any species and type he ordinarily produces unfinished.

GRADING OF HARDWOOD FLOORING

Associations of Flooring Manufacturers

The principal American producers of hardwood strip flooring have, through two major trade associations, adopted uniform grading rules and regulations for commercial practice. Approved by the Bureau of Standards of the U. S. Department of Commerce, these rules and regulations are enforced rigidly, in part by the organization themselves. As a result dealers and consumers are assured of high standard merchandise and the industry is protected against sharp practices. The two organizations are National Oak Flooring Manufacturers' association, with headquarters at Memphis, Tenn., and the Maple Flooring Manufacturers' association, Oshkosh, Wis.

There are no official grading rules for plank, parquet and block flooring, but generally the different grades correspond to those of strip flooring.

Hardwood flooring grades are based principally on appearance. All regular grades possess adequate strength, durability and resistance to wear, hence these qualities are not factors. Chiefly considered are such imperfections as knots, streaks, pin worm holes and in some cases sapwood and variations in color. Imperfections in processing also are factors.

Oak Flooring (Quarter-Sawed)—Standard Grades

Clear—The face shall be practically free of defects except ⅜ of an inch of bright sap. The question of color shall not be considered.

Bundles to be 2 ft. and up, not to exceed 20% under 4 ft. Average length 5 ft.

Sap Clear—The face shall be practically free from defects but will admit unlimited bright sap. The question of color shall not be considered.

Bundles to be 2 ft. and up, not to exceed 20% under 4 ft. Average length 5 ft.

Select—The face may contain sap, and will admit pin worm holes, streaks, slight imperfections in working or a small tight knot, not to exceed one to every 3 ft. in length.

Bundles to be 2 ft. and up. Average length 4 ft.

Square edge strip flooring is graded as above, but the Clear is bundled 3 ft. and up, average length 6 ft.; Select bundles 3 ft. and up, average length 5 ft.; Select bundled 3 ft. and up, average length 5 ft.; No. 1 Common bundled 2 ft. and up, average length 4 ft.

Oak Flooring (Plain-Sawed)—Standard Grades

Clear—The face shall be practically free of defects except ⅜ of an inch of bright sap. The question of color shall not be considered. Bundles to be 2 ft. and up, not to exceed 20% under 4 ft. Average length 5 ft.

Select—The face may contain sap, and will admit pin worm holes, streaks, slight imperfections in working or a small tight knot, not to exceed one to every 3 ft. in length. Bundles to be 2 ft. and up. Average length 4 ft.

No. 1 Common—Shall be of such nature as will make and lay a sound floor without cutting. Bundles to be 2 ft. and up. Average length 3 ft.

No. 2 Common—May contain defects of all characters, but will lay a serviceable floor. Bundles to be 1¼ ft. and up. Average length 2½ ft.

Hard Maple, Beech, Birch Flooring—Standard Grades

First Grade—Shall have the face practically free of all defects, but the varying natural color of the wood shall not be considered a defect. Standard lengths in all widths in this grade shall be trimmed 2 to 16 ft. as the stock will produce; the proportion of lengths 2 to 3½ ft. inclusive, shall be what the stock will produce up to 25%.

Second Grade—Will admit of tight, sound knots and slight imperfections in dressing, but must lay without waste. Standard lengths in all widths in this grade shall be trimmed to 1½ to 16 ft., as the stock will produce; the proportions of lengths 1½ to 3½ ft., inclusive, shall be what the stock will produce up to 40%.

Third Grade—Must be of such character as will lay and give a good serviceable floor. Standard lengths in all widths in this grade shall be trimmed 1 to 16 ft. as the stock will produce; the proportion of lengths 1 to 3½ ft., inclusive, shall be what the stock will produce up to 60%.

Special Grades—First Grade White Hard Maple is special stock, selected for uniformity of color. It is almost ivory white and is the finest grade of Hard Maple Flooring that can be produced.

First Grade Red MFMA Beech and MFMA Birch are special grades produced from all red-faced stock, and are specially selected for color. The color is rich, being a soft tint which lends to these two woods an individuality found in no other species.

Pecan Flooring—Standard Grades

First Grade—Shall be practically free of defects, but the varying natural color of the wood shall not be considered a defect. Bundled 2 to 16 feet, not over 25% of the footage shall be 2 and 3 feet.

First Grade Red—Same as First Grade except shall be made from all Heart wood.

First Grade White—Same as First Grade except shall be made from all bright Sap wood.

Second Grade—Will admit of tight sound knots, pin worm holes, streaks and slight imperfections in working. Bundled 2 to 16 feet, not over 30% of the footage shall be 2 and 3 feet.

Second Grade Red—Same as Second Grade except shall be made from all Heart wood.

Third Grade—Shall be of such nature as will make and lay a sound floor without cutting. Bundled 2 to 16 feet, not over 50% of the footage shall be 2 and 3 feet.

Fourth Grade—May contain defects of any character so long as will lay a serviceable floor. Bundled 1¼ to 16 feet.

STORING AND HANDLING HARDWOOD FLOORING

Certified hardwood flooring is kiln-dried at the factory to a low moisture content. Moisture content later equalizes itself, however, to the moisture condition in the area where the flooring is used.

For best results the flooring must be protected from the elements during storage and delivery. This guards against excessive shrinkage or expansion which may cause cracks or buckling after the floor has been laid. Manufacturers, who ship hardwood flooring in closed box cars, recommend the following precautions in handling:

1. Don't unload in rain, fog or even in excessively humid conditions. It will pay to wait for a better day.

2. Don't store flooring in leaking enclosures. When water leaks in profit leaks out.

3. Don't pile on storage floors that are less than 18 inches from the ground and that haven't good air circulation underneath. The first rule of preserving a good flooring pile is to keep its feet dry.

4. Don't use storage space near the end of the building —even though storage bins are protected by doors. Don't leave doors open in rainy weather.

5. Don't fail to provide protected ventilation in order to keep relative humidity at a minimum. Damp, motionless air is as harmful to dry flooring as it is to human comfort.

6. Don't fail to choose the sunny side of your building for your flooring storage bins, and see that the weatherproofed windows are clear to let the sunshine through. The sun warms the air and increases its capacity to take up the moisture which ventilation removes.

7. Don't take a chance at unloading flooring at the job outside of shelter. It is cheaper to truck it back to your storage shed than to gamble on the weather overnight.

8. Don't store or lay flooring in a cold or damp building. Wait until the plaster and cement work have dried thor-

oughly and the woodwork and trim have been installed.

9. Especially in winter construction, the building in which the flooring is to be used should first be heated to 70° F. Then the flooring should be piled loosely in the building at least four or five days before being laid. This permits the flooring to reach a moisture content that is in balance with that of the building.

ESTIMATING FLOORING REQUIREMENTS

To cover a certain space, figure the number of square feet, which means the width multiplied by the length; for instance, a room 12 feet wide by 15 feet long would contain twelve times fifteen or 180 square feet. Add to the square feet of surface to be covered the following percentages:

50% for ..... 33/32"x1½"
37½% for ..... 33/32"x2"
33⅓% for ..... 33/32"x2¼"
24% for ..... 33/32"x3¼"
33⅓% for ..... ⅜"x1½"
25% for ..... ⅜"x2"
33⅓% for ..... ½"x1½"
25% for ..... ½"x2"

The above figures are based on laying flooring straight across the room. Where there are bay windows or other projections, allowances should be made for additional flooring. It is always well to order 5% additional flooring to take care of floor layers' cutting and possible damage if carelessly handled.

The following table shows the available sizes of prefabricated blocks—squares and rectangles—of oak, hard maple, beech and walnut.

Strip width	½-inch thick	25/32-inch thick	33/32-inch thick
	Inches	Inches	Inches
1½ inches.	7½ by 7½ 9 by 9 6 by 12	7½ by 7½ 9 by 9 6 by 12	7½ by 7½ 9 by 9 6 by 12
2 inches...	8 by 8 10 by 10 6 by 12	8 by 8 10 by 10 6 by 12	8 by 8 10 by 10 6 by 12
	Inches	Inches	Inches
2¼ inches.	....	6¾ by 6¾ 9 by 9 11¼ by 11¼ 6¾ by 13½	6¾ by 6¾ 9 by 9 11¼ by 11¼ 6¾ by 13½
3¼ inches.	.....	6½ by 13	6½ by 13

LAYING HARDWOOD FLOORING

1. For most satisfactory results it is generally recommended that hardwood strip flooring be laid on a soundly constructed subfloor about an inch thick. Subfloor boards preferably should be no wider than 6 inches and should be spaced about ⅛-inch apart. They should be face nailed solidly at every bearing point with two 10-penny nails. All butt joints should rest on bearings. If wider boards are used, there should be extra nailing at each bearing. The 6-inch boards, however, are recommended because they are subject to less shrinkage and expansion. Inadequate nailing of subfloor boards often results in squeaky floors.

2. Subfloors generally should be laid diagonally. Added bracing strength is given a building if the diagonal direction is reversed on alternate floors.

3. Strip floors preferably should be laid lengthwise of the building, that is, at right angles to joists. If applied over old finish floors, however, they should be at right angles to them. In modern home construction thresholds between adjoining rooms are omitted. Floor strips should run continuously through doorways.

4. If necessary in the interest of economy, strip flooring may be laid directly on joists. To make the floor suitably strong and durable, however, such floor strips should be at least 25/32-inch thick. Joists should be spaced no wider than 16 inches.

5. Strip floors may be installed over basement or other concrete floors by laying the strips directly on wooden sleepers properly secured to the concrete. Conditions cited in above paragraph apply in this case.

THE SALE of flooring builds a natural market for maintenance materials like cleaners and waxes, as well as scores of other items.

6. In cases where strip flooring is to be laid over concrete in a school or other building in which heavy traffic is anticipated, a wooden subfloor is recommended as a base. The subfloor should be nailed to wooden sleepers installed in the concrete when it is poured. Spaced at no more than 10 inches, the sleepers should be securely attached to the concrete, preferably with steel clips.

7. A good quality building paper, the type known as 15 pound asphalt, saturated felt should be laid between the subfloor and the finish floor. Besides absorbing moisture which otherwise would permeate the finish floor, the building paper prevents dust from seeping through the floor seams. In basement installations the building paper should be placed directly over the concrete. For rooms directly over heating plants double weight building paper or standard insulating board is recommended. Applied either on the basement ceiling or between floor joists, these provide protection against excessive heat which might cause the floor to buckle.

8. Ventilation should be provided beneath buildings without basements. This may be done by means of vents or other openings in the foundation walls. The openings should be at least 1½ percent of the first floor area.

9. Strip flooring should not be laid tight against studding or walls. An expansion space of not less than ½-inch should be allowed.

10. Tongued and grooved strips always should be toenailed, that is, with the nails at the end of each piece driven through the tongue at an angle of 45 to 55 degrees. The floorings also should be blindnailed, that is, set with a nail-set. Square-edge strips, of course, are face-nailed.

11. In plank flooring each piece, in addition to being blind-nailed, should be face-nailed about every 30 inches. The ends of each piece also should be fastened to the subfloor with countersunk screws. Wood plugs glued in the plank conceal screwheads and lend decorative effect.

12. The recommendations regarding subfloors for strip flooring also apply to plank flooring.

13. Parquet flooring, including prefabricated blocks, may be nailed over a wood subfloor or old finish floor, or it may be laid in mastic over concrete. Preferably the subfloor should cross the joists at right angles rather than on a diagonal. When it is installed before the type of finish flooring has been decided upon, it is best to lay it at a 60 degree angle. This "compromise" construction will make it adaptable to any type of flooring.

14. Where a concrete floor is involved, some manufacturers strongly recommend that a wood subfloor be laid in mastic over the concrete and that the finish flooring be nailed to it.

15. When parquetry is to be laid in mastic directly over concrete, extreme care must be taken that the concrete

surface is perfectly clean, dry and level. Brushing the surface with a hair broom is recommended for ridding the concrete of loose dirt. A heavy coat of asphalt primer should be then applied evenly, brushed in well, and allowed to dry for 24 hours before the mastic is applied and the finish floor laid. Mastic usually is spread to a minimum average thickness of 3/32-inch.

16. When parquetry is to be laid over concrete that is directly on the ground or over unventilated spaces, and there is a consequent danger of floor dampness, the concrete floor should be first waterproofed. This may be done by applying a coat of hot asphalt and covering it with asphalt saturated felt. In cases where the dampness is excessive, use three layers of felt, with asphalt rolled smoothly on each layer. If there is danger of water seepage, use five layers.

FINISHING HARDWOOD FLOORING

Preparing the Surface

Sanding or scraping: Although certified unfinished hardwood flooring is smoothly surfaced at the factory, scratches and other slight marks caused by handling usually appear when the floor has been laid. These may be removed by sanding or scraping, preferably by a specialist in that line. Nowadays an electrically operated sanding machine generally is used for this work, since sanding or scraping by hand is laborious and time consuming. For fine floors most manufacturers advise at least four sandings, starting with No. 2 sandpaper and graduating down to No. ½, No. 0 and No. 00. A final buffing with No. 00 or No. 000 sandpaper assures an even smoother surface. Many authorities say that best results are obtained when the final traverse is made by hand.

Staining: It is important that the first coat of stain or other finish be applied the same day as the last sanding. Otherwise the wood grain will have risen and the finish consequently will be slightly rough. Stain is not used if one desires a finish retaining the natural color of the wood. When used, it is applied first, before wood filler or other finishes. It should be put on evenly, preferably with a brush 3 or 4 inches wide.

Use of wood filler: Paste wood filler frequently is used to fill the minute surface crevices in oak and other hardwoods having large pores. It gives the floor the perfectly smooth surface required for a lustrous appearance. Filler is applied before any other finishing materials, except stains and it is important that it be allowed to dry for 24 hours before the next operation is begun. Wood filler may be colorless or it may contain pigment to bring out the grain of the wood more contrastingly. For residential oak flooring, wood filler is nearly always recommended. Sometimes it is omitted when seal is used. Recommendations of floor seal manufacturers vary in this regard.

Type of Finish

The ideal qualities of a finish for hardwood floors are: 1) attractive appearance; 2) durability; 3) ease of maintenance; 4) capacity for being retouched in worn spots without revealing a patched appearance. Additionally, when a finish is applied to high grade flooring of considerable natural beauty, it usually should be transparent in order to accentuate that beauty. The three principal types of finishes are: floor seal, varnish and shellac. Lacquer also is used occasionally.

Penetrating Seal: Penetrating seal, a relatively new type material, is being used on an increasingly large scale for residential as well as heavy duty flooring. It differs from other finishes in this important respect: rather than forming a surface coating, it penetrates the wood fibers, sealing them together. In effect it becomes a part of the wood itself. It wears only as the wood wears, does not chip or scratch and is practically immune to ordinary stains and spots. While it does not provide as shiny an appearance as other finishes, it has the advantage of being easily retouched. Worn spots may be refinished without presenting a patched appearance. Floor seals are available either colorless or in color.

Varnish: Varnish presents a glossy appearance, is quite durable, fairly resistant to stains and spots, but will show scratches. It is difficult to patch worn spots, however, without leaving lines of demarcation between the old and the new varnish. New types of varnish dry in eight hours or less. Like the other types of finish it gives satisfactory results if properly waxed and otherwise maintained.

Shellac: One of the chief reasons shellac is so widely used is its quick-drying property. Workers, starting with floors in the front of a house and shellacking toward the rear, may begin applying the second coat by the time they have finished the first. Shellac spots rather readily if water or other liquids remain on it long. It is transparent and has a high gloss. It does not darken with age as quickly as varnish.

Sometimes used is a combination varnish-shellac finish which embodies most of the advantages as well as the disadvantages of each material.

Lacquer: Lacquer is a glossy finish with about the same durability as varnish. Because it dries so rapidly it requires considerable skill in application. Worn spots may be retouched with fairly good results, since a new coat of lacquer dissolves the original coat.

Waxing

All hardwood floors should be waxed after the finish has dried thoroughly. In some cases two or three coats are recommended for best results. Wax not only imparts a lustrous sheen to a floor, but forms a protective film that prevents dirt from penerating the wood pores. When it becomes dirty, it is easily removed and new wax applied.

Floor wax is available in two forms—paste and liquid. The liquid type recommended for hardwood floors is known as rubbing wax.

RENTING FLOOR SANDING MACHINES

An increasing number of dealers today are establishing and operating floor sanding machine rental service—another profitable adjunct to not only the flooring and floor covering department but the paint department as well.

The Rental Market

The rental market for sanding machines consists of home owners (men who are amateur mechanics and like to do odd painting and fixing-up jobs around the house) who desire to sand and re-finish their own floors. In addition, many carpenters and painters do not own their own floor sanding equipment and rent machines extensively.

While the subject of operating a rental floor sanding department is discussed in more detail in Section 6, Power and Hand Tools, there are a few considerations relating to the mechanics of the department that should be covered here.

Refinishing Old Floors

The method of refinishing old floors is essentially the same as for new floors, with the exception that the first cut is usually coarser than is given to a new floor. This is necessary to remove the accumulation of varnishes and waxes that may have been built up on the old flooring, as well as to smooth out rough spots and stains.

For customer satisfaction, it is always wise to give complete instructions to a consumer customer, in order that he may be reasonably sure of obtaining a satisfactory job on his floors.

A few of the points to stress are:

1. Always supply customer with suitable instruction sheet or folder, showing how to operate and use the sander.

2. Instruct customer on how to apply and change sandpaper, stressing the fact that the paper must be tight to the drum or breakage will result.

3. In most cases it is better to use three grades of paper on a refinishing job: rough, medium, and fine. Many people assume that a floor is "good enough" without using the fine paper. This is a serious error; one that will be magnified after the finishing material is applied.

4. Be sure that all nails are "set" in the floor and in the quarter round. This prevents tearing of sandpaper or damage to pad on machine.

5. Always remove varnish or other old finish by oper-

ating the machine **across the grain.** This action helps to prevent "gumming" of the sandpaper.

6. Always use the medium of cutting paper and follow it with the fine or finishing paper. Operate the machine with **the grain** of the wood when using these two grits.

Sanding Concrete Floors

The enormous growth in the use of cellars as rumpus rooms is rapidly developing the concrete floor market. It is just as easy to sand down and finish off a poured concrete floor as it is to refinish wood. Such sanding on concrete opens its pores and prepares the surface for the application of covering coats. Paint manufacturers have perfected materials that may be used with satisfaction on concrete floors **if they are free from moisture.**

Promoting the service—Word of mouth advertising by sales personnel is extremely effective. They should stress the ease and low cost of renewing floors with sanders. They should include reference to the related products the dealer wishes to sell—their quality, their ease of application, their value, their appearance after application, etc.

Advertising in telephone directories and in local newspapers is effective both in renting machines and in selling floor materials. The ad can be small but should be run consistently, so that inquiries will be spread out and the machines kept in demand all the time. Sales-stimulating folders and booklets covering both machines and related items should be handed out to customers and mailed to them at every opportunity.

But above all in value are the recommendations of pleased customers—people who have hired a good machine with good sandpaper and other accessories and now have a brand new floor which in every respect is equal to its appearance when the house was first built.

ASPHALT TILE

Asphalt tile, which is available in a wide range of plain and marbelized colors, was developed primarily for use in basement and on-grade areas where linoleum and most other flooring materials usually are not recommended because of the presence of moisure and alkali. But it is also suitable for any installation, on, below, or above grade. Greaseproof asphalt tile, conductive asphalt tile, and industrial asphalt tile have been developed for installation under special conditions.

Composition and Manufacture

Asphalt tile is composed of a thoroughly blended composition of thermoplastic binder of the asphaltic or resinous type, asbestos or cotton fibres, and inert materials as fillers or pigments. It is formed under pressure while hot, and is then cut to size.

Physical Characteristics

Asphalt tile has many inherent characteristics which are leading to its rapidly expanding use in the light construction field and other markets served by the building products dealer. Its first cost compares favorably with that of other flooring. Asphalt tile units are pre-cut to size, eliminating practically all waste and permitting easy and economical installation. Among the physical characteristics of asphalt tile are the following:

Long wear—Asphalt tile is durable, tough and resists abrasion, all of which makes for long service under hard use. Made principally of two practically indestructible materials, it cannot rot and will not dry out.

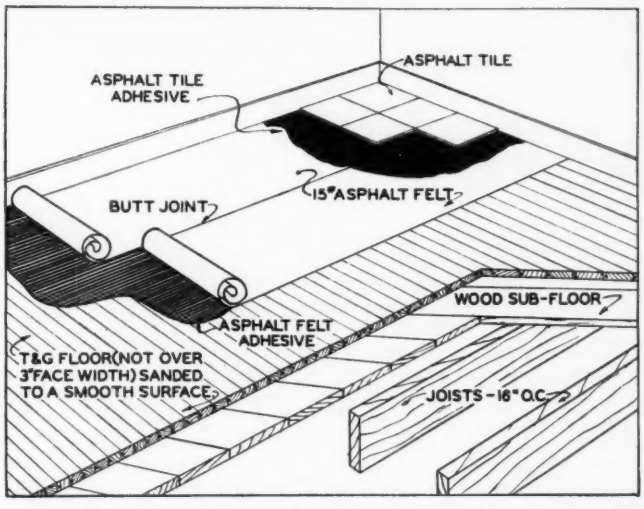
Moisture resistance—Its high resistance to moisture makes it the only resilient flooring that can be satisfactorily installed below grade.

Resilience—Because of its innate resiliency, it is quiet and comfortable to walk on. When used in light manufacturing areas it is easy on the workers' feet.

Fire resistance—Being a combination of inorganic minerals, it is highly fire resistant.

Attractive colors—The wide variety of plain and marbleized colors in which asphalt tile is furnished, makes possible an infinite number of patterns and color combinations.

***INSTALLING** asphalt tile over a concrete sub-floor, above, and putting it over wooden floor, below.*



Thus floors can be built to harmonize with any type of interior decorations.

Easy maintenance—Asphalt tile is odorless, non-absorbent and will not originate dust. It is easily cleaned with a mop, and requires no waxing or further maintenance, although if a highly polished floor is desired, it can be waxed to a lustrous finish.

Quick installation—The convenient sizes of asphalt tile units permit rapid installation, with a minimum of disturbance to business routine.

Immediate use—As soon as it is laid, it is ready for use.

Dimensions of Asphalt Tile

Asphalt tile is manufactured in two common thicknesses: ⅛ inch and 3/16 inch.

The sizes of tile are 6"x12", 9"x9", and 12"x12".

Border tile are made 18"x24", and are cut to the required width on the job.

Half tile (cut diagonally) is made in 9"x9" and 12"x12" sizes.

Feature strips are made 1", 1½", 2½", and 3" in width.

Set-on Cove Base (in black only) is made in approximately 4" and 6" heights.

Colors of Asphalt Tile

The various colors obtainable in asphalt tile include plain colors and marbleized colors. Among the plain colors available are black, dark red, light red, medium red, white, cream, blue, dark green, light green, light gray, tan and buff. Marbleized colors include background

colors corresponding to the plain colors above mottled with any one or more of a number of wide range of colors.

Installation of Asphalt Tile

Asphalt tile is a thermoplastic material and for its satisfactory performance, the sub-floor must be smooth, sound, firm and free from springiness. It will follow the exact contour of the underfloor; consequently, all irregularities must be removed.

Over wood sub-floors—Wood sub-floors should be of double construction and of sufficient structural strength to carry intended loads without deflection. The surface shall be of well seasoned, kiln dried tongue and groove flooring not over 3" face width, topnailed and toenailed. The surface flooring shall have been sanded to a uniform smooth surface and shall contain no cupped or springy boards.

In the event that the sub-floors are so rough or uneven that they are unsuitable for the direct application of asphalt tile, a suitable underlayment board or suitable underlayment as recommended by the manufacturer of the asphalt tile should be installed.

Under no circumstances should asphalt tile be laid over wood sub-floors which are subject to conditions which might cause buckling or rotting of the wood. This condition occurs generally on wood floors that are below-grade, on-grade, or above the ground and without heat or adequate ventilation underneath the floor.

Over concrete sub-floors—New concrete sub-floors should be troweled to a smooth plane surface; free from score marks, grooves or depressions; scraped free from all foreign material and brushed clean.

Old concrete sub-floors should be clean and free from all floor coverings or other surface treatments. Paint must be removed from floors in direct contact with the ground. Expansion joints and score marks should be filled in accordance with the recommendations of the manufacturer furnishing the asphalt tile.

In the event that the sub-floor is so rough or uneven that it is unsuitable for the direct application of asphalt tile, a suitable underlayment as recommended by the manufacturer of asphalt tile should be installed.

Note: The Asphalt Tile institute has prepared a detailed set of "Recommended Specifications for the Installation and Maintenance of Asphalt Tile Flooring." A copy of this specification may be obtained without charge by writing to the institute's office at 101 Park avenue, New York 17, N. Y.

CORK TILE

For interiors where quiet, comfort and dignity are of paramount importance, cork tile is an excellent flooring material. It is made of pure high-grade cork shavings, compressed and baked in molds. The natural resins in the cork bind the particles together, producing a closely knit, long-wearing and resilient tile.

Footsteps on cork tile floors make almost no sound. The natural resilience of cork cushions every step. This not only reduces noise but also reduces fatigue for people standing or walking on these floors. As cork provides insulation against heat and cold, cork tile is comfortable underfoot. Cork tile will not "dust" or crumble and has exceptional non-slip qualities.

Cork tile is particularly suited for floors in residential bedrooms and bathrooms where a warm and resilient floor adds to underfoot comfort. In addition, dealers have a ready-made market in local libraries, offices and reception rooms where dignity is required.

RUBBER TILE

A wide variety of rubber tile floorings is available, and the selections of colors and patterns permit their incorporation in connection with any decorating scheme.

Rubber tile is recommended where long service is a requisite, or where traffic is severe.

Both natural and synthetic rubber are used in the manufacture of tiles, although in many respects synthetic rubber has indicated a superiority. Most products are a combination of the rubber and cotton or similar fiber, blended and formed to the desired dimensions and thickness by a number of exclusive processes.

THE use of asphalt tile flooring in residential construction is expanding rapidly.

The fiber adds to the beauty as well as the performance requirements of the tile, in that it prevents colors from running together during manufacture and provides an exceptionally clean cut appearance in marbelized or other blended finishes.

Because of its toughness, rubber tile and particularly that with fiber reinforcing, can withstand high condensed loads such as furniture or similar objects present.

Periodic buffing with No. 1 steel wool is recommended as a maintenance procedure to restore the luster and to help keep the rubber tile in prime condition. Cigarette burns and unusual surface stains can be easily removed in this manner.

LINOLEUM

In the minds of some people, practically all resilient-type floor coverings are known as "linoleum." Actually, however, linoleum is one of a number of resilient floorings, including resilient tiles like asphalt tile, rubber tile, and cork tile, and printed felt-base rugs and floor coverings. The latter consist of a durable enamel coating baked on an asphalt-saturated felt backing.

Types of Linoleum

Linoleum consists of a mix composed principally of ground cork, wood flour, oxidized linseed oil, color pigments and resins bonded to a felt or burlap backing by heat and pressure. Since colors and patterns extend through to the backing, they remain clear and sharp as long as the linoleum lasts. Five main types of linoleum—plain, jaspe, Marbelle, straight line inlaid, and embossed inlaid—are produced.

Plain linoleum, as the name indicates, is linoleum of a single color. Heavy gauge plain linoleum in the darker shades is known also as battleship linoleum.

Jaspe linoleum presents a two-toned or multi-toned striated appearance.

Marbelle linoleum, which is composed of several colors or several tones of the same color, can be recognized by its allover marble effect without other pattern.

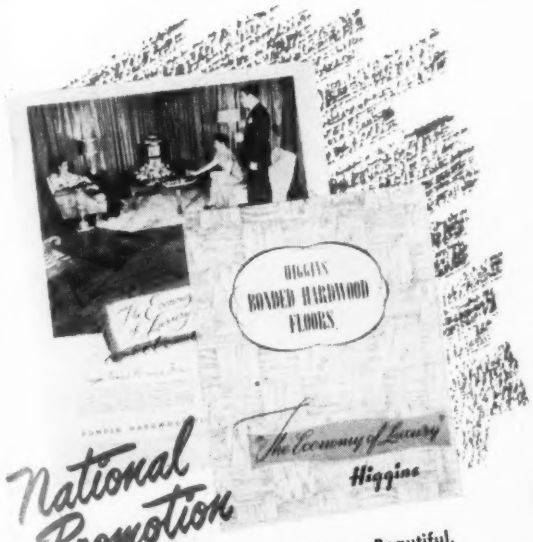
Straight line inlaid linoleum consists of design units of plain or marbelized linoleum keyed by tremendous pressure to a fabric backing. It gets its name from the fact that the blocks of the pattern, which are usually of contrasting colors, are die-cut so that the lines between them are sharp and distinct.

. . . with Higgins' luxurious, economical

BONDED HARDWOOD FLOORS

Higgins Bonded Hardwood Floors are the world's most saleable flooring—and the most profitable floor to sell. Here you have beauty, luxury and economy all in a single package . . . factory finished and waxed 9" squares of selected bonded hardwood, many times stronger than conventional blocks . . . precision cut, fully tongued and grooved, so every square fits perfectly . . . so easy to lay by either blind nailing or in adhesives that the laid floor costs less than substitute flooring . . . A floor that will not warp or buckle even when laid directly over concrete . . . that is thoroughly impregnated against rot and vermin . . . in fact, a floor that has no peer for beauty, durability or economy!

Factory representatives calling on lumber dealers, building supply houses, architects, general contractors, flooring contractors and others are invited to write Higgins, Inc., New Orleans, La.



Ads in such magazines as House Beautiful, and in building and architectural publications, are bringing in thousands of inquiries. Write for our descriptive folder.

Higgins
INCORPORATED REG U S PAT OFF NEW ORLEANS

Makers of Higgins pleasure boats, marine craft, bonded hardwood floors, Thermo-Con forms and generators, plywood, mahogany and wood products.

Embossed inlaid linoleum has portions of the pattern depressed slightly so that blocks or other design elements seem to stand out in relief. It is formed by arranging the "mix" in the desired pattern with metal stencils and then solidifying this design by passing the material through a huge hydraulic press. Subtle color shadings not possible in other types of linoleum can be produced in this manner.

Use of Linoleum Expanding

Lumber and building products dealers are finding linoleum a profitable and increasingly important part of their flooring business. Every home constructed has certain areas where smooth surface floor covering is desirable. Linoleum was at one time confined to the service areas such as kitchen and bathroom, but today, because of the suitability of the product's designs and coloring, there is a growing trend to using it in the other rooms as well.

Thicknesses of Linoleum

Linoleum is offered in three general thicknesses: heavy gauge (approximately ⅛" thick), standard gauge (approximately 32" thick) and light gauge (approximately 1/16" thick). Specification of the various thicknesses should be dependent upon the requirements of the particular area to be covered. Commercial or heavy traffic areas are best floored with heavy gauge linoleum. In general, standard gauge linoleum should be specified for residential areas. For those desiring an economy grade floor covering, light gauge material is suitable.

Merchandising of Linoleum

So far as merchandising linoleum is concerned, dealers find it among those products taking little space and small investment for effective display. The range of patterns available is best shown in actual merchandise in roll or plaque form. Similar to other building products, the inventory should be kept where the desired lengths can be cut without disrupting the function of the sales room or disturbing the arrangement of the display. Pattern displays should be augmented with in-use displays of the product installed.

Installation of Linoleum

While the installation of linoleum is the job of a trained mechanic, dealers selling the merchandise should have a knowledge of the product's installation specifications. A knowledge of the proper construction and preparation of underfloors to receive linoleum is essential.

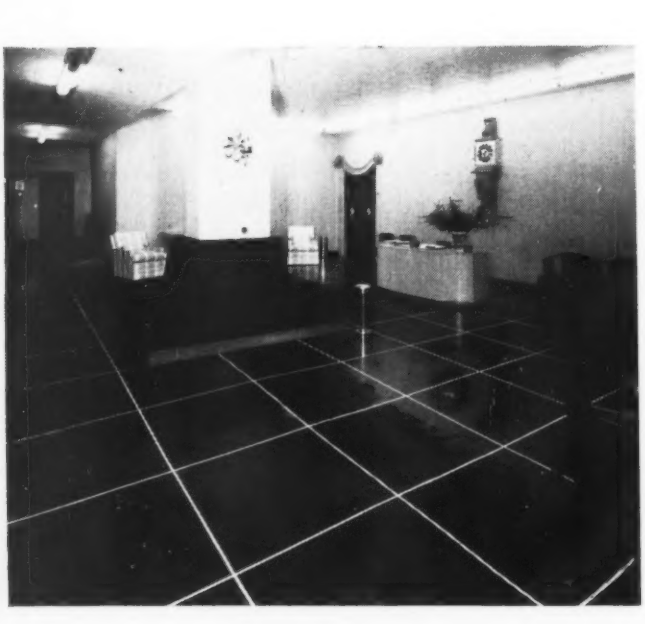
The underfloor must be smooth and even. Wood floors should be of double construction brought up to a proper surface below the finished floor level. The lower boards of this double floor should be thoroughly face-nailed to the joists and laid diagonally over them. The top boards should be either (a) thoroughly dry and well-seasoned tongue and groove lumber not more than 3¼" wide, laid at right angles to the floor joists and toenailed with eight-penny steel-cut nails on 18" centers; or (b) ¼" plywood. The contact between the edges of the plywood should be snug and complete. The plywood should be nailed to the rough wood underfloor with cement-coated or resin-sized nails 1¼" long which should be spaced 5" on all edges and 8" through the body of the plywood in staggered rows.

On old wood floors, loose, defective or badly worn boards should be replaced and face-nailed. On old or new floors, any unevenness at butts or joints must be scraped or planed smooth and even. Where it is necessary to smooth the underfloor by the sanding method, the wood floor should be sealed after sanding with a thin coat of shellac or sealer.

No linoleum should be laid under any circumstances over any wood floor which is below grade, directly in contact with the ground, or over an unexcavated area unless proper ventilation is provided between the underfloor and the ground.

Concrete floors to receive linoleum should be broom-clean and satisfactorily dry. The surface should be a smooth, even, troweled finish. On standard construction the concrete slab should have a cement topping not less than 1½" thick and a mix no leaner than one-part Portland Cement and three-parts clean screened sand. Expansion joints which are cut through the top layer of the cement must be retroweled, furnishing an even top surface. On monolithic construction the concrete floor slab should be troweled to a smooth finish, free from high and low spots. On concrete floors where expansion joints have not been retroweled, they must be filled in by the linoleum contractor with non-shrinking plastic material, so that such joints will not show through the surface of the linoleum.

Installation of linoleum should not proceed until tests have been made to assure that the floors are satisfactorily dry. No linoleum should be laid over concrete which is below or on grade.



THE ABOVE attractive floor treatments are achieved with, (left) rubber tile, and (right) a linoleum tile. Both types insure long satisfactory service in homes as well as commercial buildings.

Section 10

Roofing, Shingles, Siding

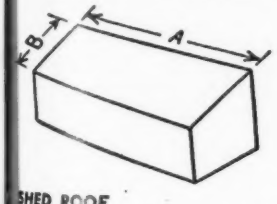
PROTECTION AND BEAUTY—these are the two powerful selling points that make roofing, shingles and siding big volume items for the lumber and building products dealer. Many products offer the customer either protection against the elements or beautification of his home and the building he uses. Unlike roofing, shingles and siding, there are relatively few products that incorporate both of these two strong appeals.

Roofing, shingles and siding are made from many different base materials, allowing the customer a wide variety to select from and enabling him to use the one that will best fit his needs. The dealer who is familiar with the principal types of products in this category is in a position to render valuable service to the customer by being able to offer unbiased and accurate information on the properties of each. Intelligent counsel of this kind can have only one result—satisfied customers who will continue to place their building problems and needs in the hands of the dealer for years to come.

HOW TO FIGURE ROOF AREAS

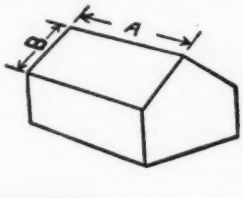
Most all roof products are sold by the square, that is, enough material when laid according to the maker's instructions, to cover 100 square feet of surface. The number of squares required is determined by dividing the square foot area of a roof by 100.

Below are the methods of figuring simple roof areas:



SHED ROOF

Length of roof (A) multiplied by slope of roof (B) gives the total roof area.



GABLE ROOFS

Figure one pitch same as for shed roofs—then multiply by two.

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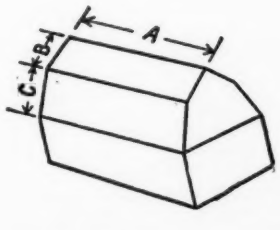
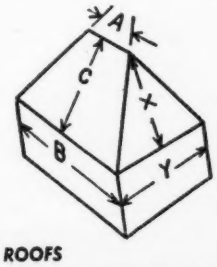


GAMBREL ROOFS

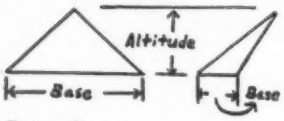
Add length of B and C to determine rafter length. Multiply the sum of these by length of the roof (A). Then multiply by two. The result is the total roof area.



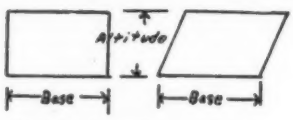
HIP ROOFS

Add length of ridge (A) to length of eave (B) and divide by two. Multiply this sum by slope (C). Multiply slope (X) on the triangle side, by length of short eave (Y). Divide the result by two. Add the two answers and multiply by two and the result is the total roof area.

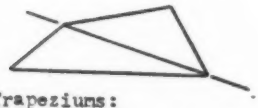
More complex roofs are figured by breaking the roof area up into convenient sections of rectangles, and triangles, and computing the area of each one separately and then adding their total.



Triangles:
Base x 1/2 Altitude = Area



Parallelograms:
Base x Altitude = Area



Trapeziums:
Divide into 2 triangles and find the area of the triangles.

Trapezoids:
Altitude x 1/2 sum of Parallel sides = Area

Circles:
Diameter x 3.1416 = Circumference
Circumference x .3183 = Diameter
Diameter^2 x .7854 = Area

Approximately the area of any roof, no matter how it may be cut, is determined as follows: Get the exact area of building, including horizontal projection of cornice and add to this the following percentages:

¼ Pitch	Add 12 Percent
⅓ Pitch	Add 20 percent
½ Pitch	Add 42 percent
⅝ Pitch	Add 25 percent
⅔ Pitch	Add 60 percent
¾ Pitch	Add 80 percent

For Illustration: Take a building 24 × 40, with one foot cornice and ⅓ pitch: 26 × 40 = 1092 square feet. 20 percent of 1092 = 218. 1092 plus 218 equals 1310 feet, the factual roof area. Add to this amount the cornice projection of dormers.

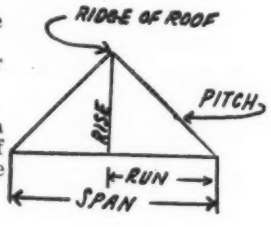
ROOF PITCHES

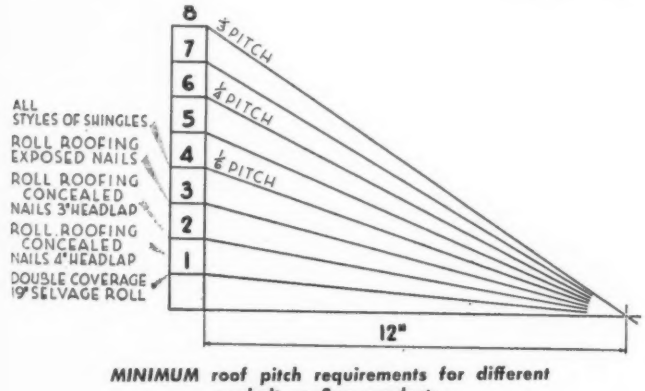
Span is the total width between the walls.

Rise is the height of the ridge or peak of a gable above the walls.

Run is ½ of the Span.

Pitch relates to the steepness of a roof. It stipulates the proportion of the rise to the span according to the following formula:





***MINIMUM** roof pitch requirements for different asphalt roofing products.*

$$\text{Pitch} = \frac{\text{Rise}}{\text{Span}}$$

To illustrate, a span of 30′ and a rise of 10′ equals a 10/30 or 1/3 pitch. If a roof is ½ pitch and a building is 24′ wide, the ridge is 12′ above the walls, because ½ of the 24′ span equals 12′.

The rise per foot of run is always equal to the pitch fraction of 24″ because two 12″ runs equal a 24″ span; for example ¼ pitch = 6″ rise per foot of run, because ¼ of 24″ = 6″.

ASPHALT ROOFING

Asphalt roofing products are classified broadly into three groups: (1) saturated felts, (2) roll roofing (and roll siding) and (3) roofing (and siding) shingles. All are made from a base of dry felt. Depending on the desired finished product, the felt, previously processed from rag, wood and other cellulose fibers, is saturated and coated with asphalt and surfaced with selected mineral aggregates. These may be smooth roll roofings on which mica and talc are spread, or they may be so-called "mineral surfaced" products, such as slate-surfaced rolls or shingles.

Characteristics of Asphalt Roofing

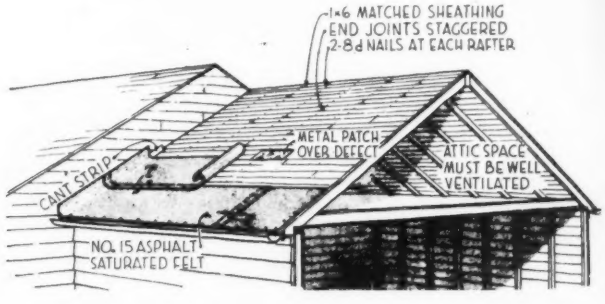
According to recent reports by the U. S. Department of Commerce, asphalt roofing constitutes the major share of all roofing produced. This fact is due principally to four outstanding characteristics of asphalt roofing products.

Fire resistance—Asphalt roofing will resist the spread of fire due to flying brands. Its fire resistance is further increased through the application of non-flammable mineral granules, so that fire insurance premiums on buildings covered with asphalt roofing are relatively low.

Beauty—There is available to the consumer today a wide range of styles, textures and colors in asphalt roofings from which to choose the one best adapted both to personal preference and a harmonious relation with other elements in the structure. Color of roofs, doors, windows, shutters, trim and sidewalls can be harmonized by the skillful planner in such a manner as to achieve real distinction.

Versatility—The wide range of asphalt roofing products allows the choice of a type to meet practically every building need, be it a temporary structure, institutional construction or any of the many types of buildings that range between these extremes. This is true not only where new construction is involved but also for all kinds of re-roofing or maintenance work.

Economy—Asphalt roofing is low in first cost, requires no painting and staining to obtain desired color effect and is easily applied and maintained. Strategically-located manufacturing plants throughout the country facilitate distribution.


1×6 MATCHED SHEATHING
END JOINTS STAGGERED
2-8d NAILS AT EACH RAFTER
METAL PATCH OVER DEFECT
ATTIC SPACE MUST BE WELL VENTILATED
CANT STRIP
NO. 15 ASPHALT SATURATED FELT

***ESSENTIAL** features of a satisfactory wood roof deck.*

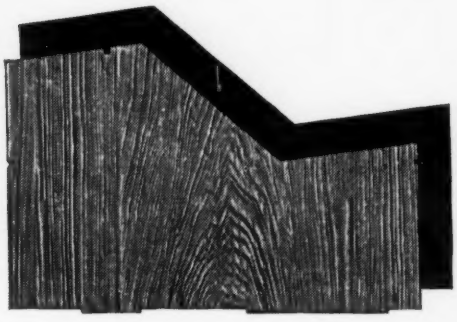
TYPES OF ASPHALT ROOFING

Asphalt roofings are made in weights varying from 45 pounds to 325 pounds per square on the roof. It is generally true that the heavier the roof the longer will be its life in service. Therefore, the heavier roofings, such as strip or individual shingles are best adapted for permanent structures having sloping rather than flat pitches such as dwellings both in town and country, and most major farm service buildings. Lighter weight roofings of the roll type are well adapted for use on structures which are less important and which are not required to render long service such as summer cottages, small farm service buildings, garages and inexpensive temporary storage or shop structures.

But it must be recognized that there is no one kind of asphalt roofing that is best for any particular building under all circumstances. Especially is this so on the farm where building types are so numerous and conditions

• Attractive dwelling roofed with K&M No. 5 Asbestos-Cement Shingles, and showing perfect alignment.

Good profits and goodwill...: both grow from the sale of



• K&M "Century" No. 5 American Method Type Asbestos-Cement Roofing Shingle . . . 24 inches wide. Note cypress texture and thatched butt.

K&M

"Century" No. 5 American Method Type

ASBESTOS-CEMENT ROOFING SHINGLES

You do your customers a real favor when you recommend "Century" No. 5 Roofing Shingles. Because units are large and self-aligning, they go up fast. And quick completion of one job means others soon to follow . . . saving money for builders and applicators . . . making additional sales and profit for you.

Recommend "Century" No. 5 Roofing Shingles for new and low cost housing . . . for re-roofing jobs. They can be applied over old wood shingles or composition roofs as easily as any other type of shingle.

To keep your customers informed about "Century" Asbestos-Cement Roofing Shingles, K&M advertises consistently in *American Builder, Practical Builder, American Roofer & Siding Contractor, Time, Newsweek, Business Week, Architectural Record, Country Gentleman, Successful Farming* . . . a bigger-than-ever campaign to increase sales for you.

Get full information about "Century" No. 5 Roofing Shingles from your K&M Distributor, or write direct to us. We'll attend to your inquiry promptly.

Original manufacturers of Asbestos-Cement Shingles in this country

KEASBEY & MATTISON
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so diverse. The style of roof selected for the house may, and perhaps should, affect the choice of roof for all other buildings, large or small, that are grouped together in the same farmstead. Uniformity of appearance is important in a group. For instance, a poultry laying house or machine storage shed located near the dwelling or adjacent to major service buildings will rightly call for a roof which conforms architecturally, whereas a more inexpensive roll product might be quite suitable if the building is in an isolated location.

Asphalt Shingles

The wide variety of types of asphalt shingles can be divided roughly into two classifications; strip shingles and individual shingles. Strip shingles have as many as four tabs per strip; the tabs are either square or hexagonal in shape. Giant individual asphalt shingles are applied by either the American or the Dutch lap method. There are staple down individual hexagonal shingles which are fastened at the bottom by staples, and lock down individual hexagonal shingles, which are secured at the bottom by tabs projecting under adjacent shingles in the course below.

Asphalt shingles are produced in a variety of colors, including plain shades of green, red and black and blended shades of green, red, blue, brown grey and purple. Two kinds of surfaces are available—smooth and textured; the latter are textured to resemble the grain of wooden shingles.

Asphalt Roll Roofing

Roll roofing is made by adding a coating of a more viscous, weather-resistant asphalt to a felt which has first been impregnated with a saturant asphalt. Some roll roofings are surfaced with mineral granules to produce a wide range of colors. Some styles are furnished in split rolls designed to give an edge pattern when applied to the roof. Mineral-surfaced rolls are also embossed to simulate brick or stone for use as sidings.

Smooth roll roofing (without mineral surface but with mica or other surface) is produced in three common weights: 45-pound, 55-pound and 65-pound. The weights denote the weight of the roll. Years ago the different weights or thicknesses of the roofing were denoted as 1-ply (35-lb.) or light, 2-ply or medium, 3-ply or heavy and the 65-pound roll as extra heavy. Some customers still use these old terms.

Roll roofings are packaged to cover a roofing square (100 square feet). The extra 8 square feet provides for lapping in laying. The roofing is usually 3 feet wide and 36 feet long. All rolls contain galvanized nails and lap cement.

Mineral surfaced roll roofing is usually produced in 90 and 92-lb. rolls, three feet wide and 36 and 38 feet long. It is especially adaptable where color is desired in the finished roof as color mineral granules are embedded in the asphalt in the upper surface. This roofing is usually manufactured in two shades of red and green and one shade of black.

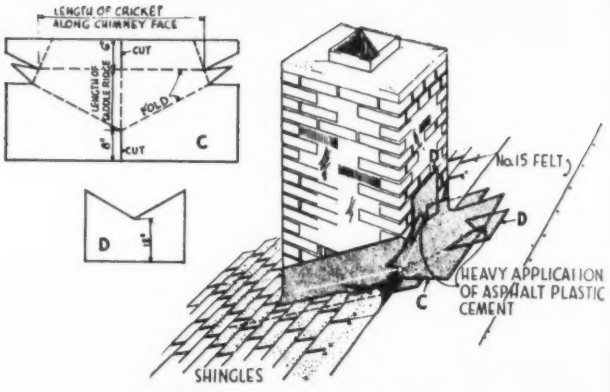
Mineral surfaced roofing is also made in three widths, 9-inch, 12-inch and 18-inch and packaged in rolls 36 feet long weighing 21, 28, and 42 pounds respectively. The 9-inch widths are used in starting shingle course (hence its name, Starter) and for covering hips and ridges. The 12-inch and 18-inch widths are used for lining valleys.

Split rolls with a diamond or other edge patterns are most commonly manufactured in 32-inch widths, 48-foot lengths and a 105-pound weight. Selvage edge mineral surface roofing is produced with a 19-inch selvage edge that leaves a 17-inch exposure of fire-resistant surface on each course. It is particularly useful on barns and other farm structures. Common weights are 130 and 140 pounds. It is packaged in 3-foot widths and 36-foot lengths.

APPLICATION OF ASPHALT ROOFING

General:

For best application it is always advisable to follow the manufacturer's instructions. Manufacturers generally are recommending that three-tab. square butt, strip shingles, the most widely used type, be applied with six nails for each strip. All six nails should be on a line 5⅝ inches up from the bottom edge of the butt. There should be a nail 1½ inches on each side of the center of each cutout and a nail 1 inch in from each side.



***FLASHING** over cricket in rear of chimney.*

Minimum pitch requirements

Any asphalt shingle can be used on roofs with slopes of 4-inch rise per horizontal foot or steeper. Wherever possible exposure should be minimized on the lower pitches, as this will increase the headlap and thereby provide better protection against water reaching the underlying deck by being forced up under the shingle by a drivring rain or by accumulations of ice or snow in winter.

It is safest to use roll roofings on roofs with a pitch of more than 1 inch per foot. The lowest pitch recommended for roll roofing when the exposed nail method is used is 3-inch per foot. The concealed nail method of application, when providing a 3-inch headlap, can be used when the pitch is as low as 2 inches, and if a 4-inch lap is used the pitch may safely run as low as 1½ inch. The only roll product that is recommended as being suitable for a 1-inch pitch is the 19-inch double coverage roof, while only a properly specified built-up (laminated) roof should be used when the pitch is less than 1-inch per foot.

Asphalt roofing products will serve out their full span of usefulness only when they are correctly and carefully applied. There are certain fundamentals which must be considered. These lie in three categories, those having to do with (1) decks, (2) flashings and (3) application of the materials on the roof.

Deck Construction and repair

Wood decks—A number of roofing troubles are caused by defects in the deck. If the deck is not rigid, movements resulting from instability may affect the lay of the roofing. Poorly seasoned deck lumber may warp and cause cocking of the shingle tabs or wrinkling and buckling of roll roofing. An effect similar to that produced by green lumber has frequently resulted from lack of proper ventilation of the attic space under the roof deck. In cold weather construction, particularly when interiors are being plastered or when plaster is drying, a positive circulation of air through the building should be maintained. This can be accomplished by opening one or more windows in the basement and/or first floor, and by opening one or more attic or second floor windows on the opposite end or side of the building. Such circulation is required to remove the moisture laden air from within the building, thereby decreasing the danger of condensation on the under side of or within the sheathing.

It is also important that the attic space be properly ventilated to minimize condensation of moisture after the building is completed and in use. Frequently moisture vapor from the lower stories, rising to the attic will be chilled below its dew point and will condense out on the under side of the roof deck, causing the sheathing boards to warp and buckle sufficiently to disturb the lay of the roofing. To avoid this, louvered openings should be constructed high up under the eaves in the gable ends or at such other locations as will insure adequate venting. Such louvers should have a total effective area equivalent to ¼ square inch for each square foot of attic floor space.

Wood decks should be made from well seasoned 1-inch x 6-inch T & G sheathing, tightly matched, and secured to each supporting rafter with two 8d nails, one driven through the edge of the board and the other through its face. Badly warped boards, or those containing excessively resinous areas or loose knots should be rejected. Any such defects appearing after the sheathing is applied should be covered with sheet metal patches before the roofing is placed. Galvanized iron, painted tin, zinc or

BUILD BETTER HOMES

WITH STAINED Shakertown Sidewalls

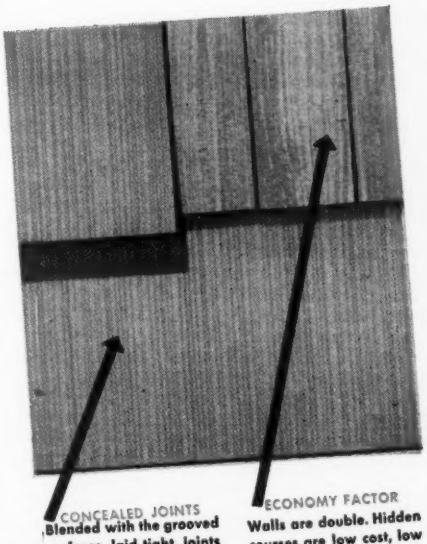
Builders are enthusiastic about this wonderful sidewall for four prime reasons:

1. Finished walls cost less! Pre-staining saves builders the time and cost of prime-coating. this saving, plus the reasonable cost of materials, makes sense.
2. Application is simple and fast. A strip of shiplap for nailing guide is the only "extra" in the way of equipment. Any man who can drive a nail can apply Shakertown Sidewalls.
3. Available in quantity and wide variety! A full selection of rich, pleasing colors lends perfect harmony to every style of architectural design.
4. Architects approve them. Home buyers prefer them. Sales are easier. Customers are assured warm, attractive homes with very low maintenance cost.

FOR SPECIFICATIONS SEE SWEET'S 8b/7a

Factories at
CHEHALIS, WASH.
CLEVELAND, OHIO

Warehouses at
CINCINNATI, OHIO
COLUMBUS, OHIO



CONCEALED JOINTS
Blended with the grooved surfaces, laid tight, joints disappear.

ECONOMY FACTOR
Walls are double. Hidden courses are low cost, low grade cedar shingles.

The PERMA PRODUCTS *Company*

EXCELLENCE PERMA OF QUALITY

7007 MORGAN AVENUE CLEVELAND 4, OHIO

copper, having a thickness approximately equal to 26 gauge is good for this purpose.

After the deck is completed it should be protected from dampness by an underlayment of No. 15 asphalt saturated roofers felt.

Plywood decks should be ½-inch thick or over, either three or five ply, the maximum center spacing between supporting members being 24 inches.

The units should be applied so that the outer ply runs at right angles to the supporting members. Edge and end joints should be tightly fitted together, and end joints in adjacent courses should be staggered. 6d nails should be used to secure the units to the supporting members at 5-inch intervals or closer.

The design of the eaves, rake, ridge or any openings through the deck should be such that the plywood will not be exposed to the weather either on a surface or on an edge.

Reroofing—over old roofing

In most localities when a reroofing job is under consideration, a choice must be made between removing the old roofing or permitting it to remain. It is generally not necessary to remove old wood shingles, old asphalt shingles or old roll roofing before applying a new asphalt roof, provided a competent inspection indicates that:

(1) The strength of the existing deck and framing is adequate to support the weight of workers and additional new roofing, as well as the usual snow and wind loads.

(2) The existing deck is sound and will provide good anchorage for the nails used in applying the new roofing.

If such inspection indicates that old wood shingles may remain, the surface of the roof should be carefully prepared to receive the new roofing by:

(a) Removing all loose and protruding nails, and renailing in a new location.

(b) Nailing down all loose shingles.

(c) Splitting all badly curled or warped old shingles and nailing down the segments.

(d) Replacing missing shingles with new ones.

(e) When the work is being done in a location subject to the impact of unusually high winds, the shingles at eaves and rakes should be cut back far enough to allow the application at these points of 4-inch to 6-inch nominal 1-inch thick wood strips. Nail the strips firmly in place, allowing their outside edges to project beyond the edges of the deck the same distance as did the wood shingles.

(f) To provide a smooth deck to receive asphalt roofing it is further recommended that a **backer board** be applied over the wood shingles or that bevelled wood **feathering strips** be used along the butts of each course of old shingles.

(2) If old asphalt shingles are to remain in place, nail down or cut away all loose, curled or lifted shingles; remove all loose and protruding nails; remove all badly worn edging strips and replace with new; and just before applying the new roofing, sweep the surface clear of all loose debris.

(3) When new asphalt roofing is to be laid over old roll roofings without removing the latter, proceed as follows to prepare the deck:

(a) Slit all buckles and nail segments down smoothly.

(b) Remove all loose and protruding nails.

(c) If some of the old roofing has been torn away leaving sections of the deck exposed, examine such areas to note any loose or pitchy knots and excessively resinous areas. Such defects should be covered with sheet metal patches made from galvanized iron, painted tin, zinc, or copper, having a thickness approximately equal to 26 gauge.

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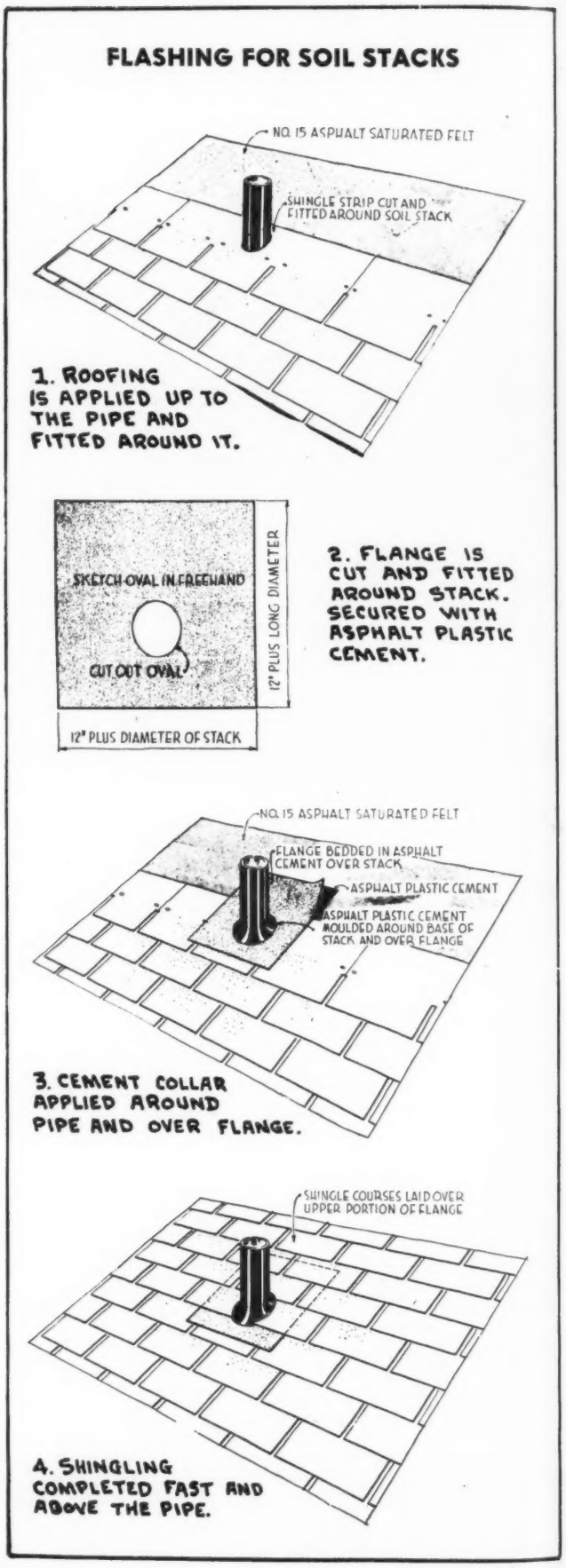
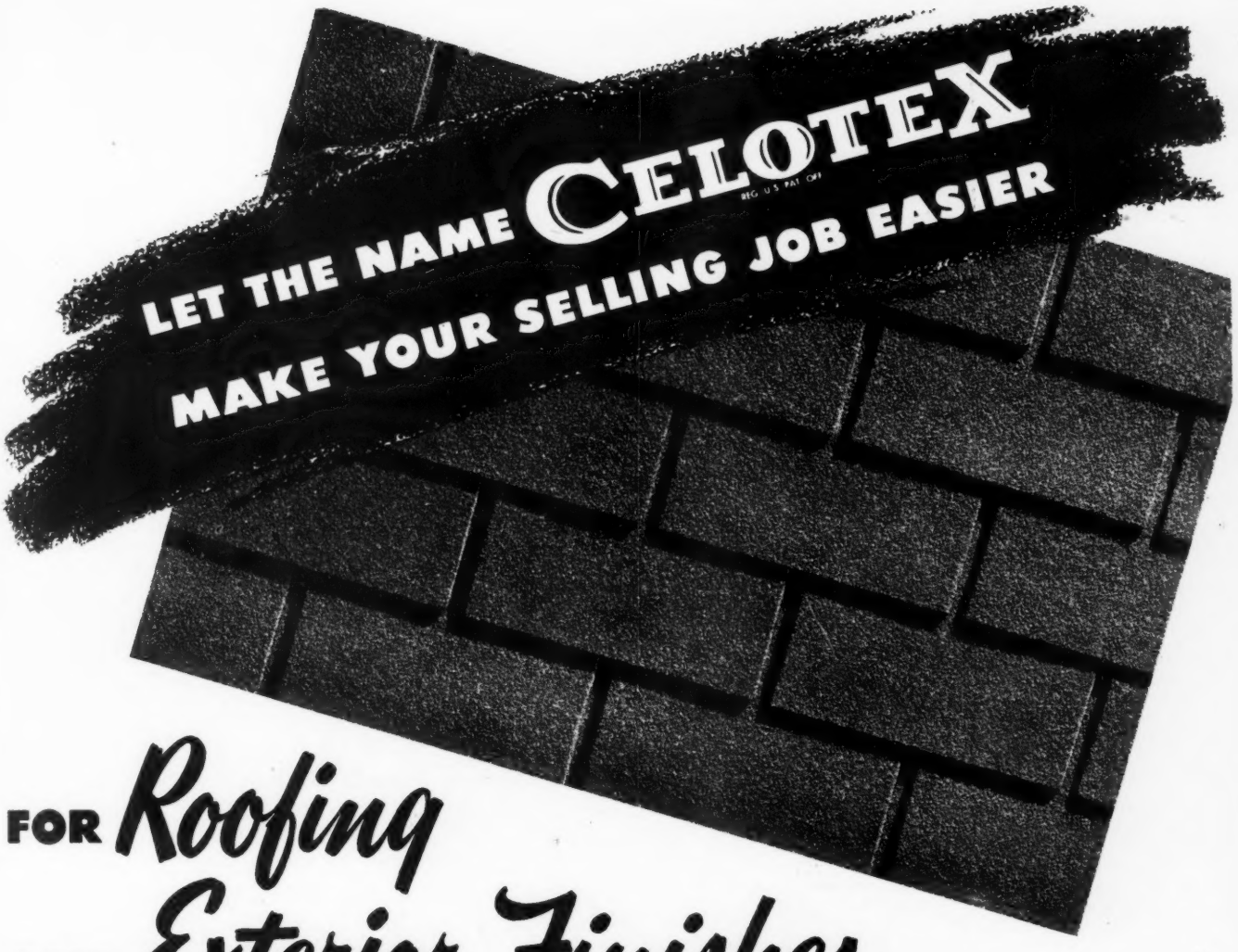

FLASHING FOR SOIL STACKS
NO. 15 ASPHALT SATURATED FELT
SHINGLE STRIP CUT AND FITTED AROUND SOIL STACK
1. ROOFING IS APPLIED UP TO THE PIPE AND FITTED AROUND IT.
SKETCH OVAL IN FREEHAND
CUT OUT OVAL
12" PLUS LONG DIAMETER
12" PLUS DIAMETER OF STACK
2. FLANGE IS CUT AND FITTED AROUND STACK. SECURED WITH ASPHALT PLASTIC CEMENT.
NO. 15 ASPHALT SATURATED FELT
FLANGE BEDDED IN ASPHALT CEMENT OVER STACK
ASPHALT PLASTIC CEMENT
ASPHALT PLASTIC CEMENT MOULDED AROUND BASE OF STACK AND OVER FLANGE
3. CEMENT COLLAR APPLIED AROUND PIPE AND OVER FLANGE.
SHINGLE COURSES LAID OVER UPPER PORTION OF FLANGE
4. SHINGLING COMPLETED FAST AND ABOVE THE PIPE.

***PROPER FLASHING** around soil stack provides permanent seal, and insures customer satisfaction. The four steps of correct flashing are shown above.*



FOR *Roofing* AND *Exterior Finishes*

CELOTEX ASPHALT SHINGLES: Triple-sealed, with colorful mineral granules deeply imbedded.

CELOTEX ASPHALT ROLL ROOFING: A variety of weights, plain or mineral surfaced. Long-lasting and weather resistant.

CELOTEX ROOF INSULATION: A genuine cane fibre product especially designed for application under built-up roofing – over wood, steel, or concrete roof decks. Available in 3 types—Vapor-Seal, Pre-Seal, and regular.

CELOTEX INSULATING SHEATHING: Strong, rigid, asphalt-coated cane fibre boards with *3 times* the insulation value of yellow pine. A wall sheathed with Celotex Insulating Sheathing has greater bracing strength and lateral stiffness than a conventionally sheathed wall.

CELO-SIDING: Strong, rigid, granule-surfaced cane fibre board that goes directly over old siding. Needs no painting. Provides siding, structural strength, insulation, and exterior finish. Colors: Buff, Green, Shell Gray.

CELOTEX INSULATING SIDINGS: Beauty treatment for old-looking homes – the only insulating sidings made with a core of Celotex cane fibre insulation board. Provides new exterior finish *plus* insulation in one material. Goes right over old siding. Mineral granule finish never needs painting. Available as "CELO-BRIC", in colorful brick designs . . . as "CELO-STONE", in rugged stone design . . . and as "CELO-SHINGLE", the popular new wood-grained shingle design.

CELOTEX ASPHALT ROLL SIDING: In brick and stone patterns. Provides excellent protection from wind and dampness for temporary structures.

CEMESTO: A *single-thickness* wall, roof deck and partition material. Core of Celotex cane fibre board reinforced on both sides with asbestos cement board. Provides structural strength, excellent insulation, and both exterior and interior finish.

THE CELOTEX CORPORATION, CHICAGO 3, ILLINOIS

CELOTEX
REG. U.S. PAT. OFF.
Building Products

CELO and CEMESTO are TRADEMARKS, REG. U.S. PAT. OFF.

leaving sections of the deck exposed, examine such areas to note any loose or pitchy knots, and excessively resinous areas. Such defects should be covered with sheet metal patches made from galvanized iron, painted tin, zinc or copper, having a thickness equal to 26 gauge.

Reroofing—Old roofing to be removed

When the framing supporting the existing deck is not strong enough to support the additional weight of roofing and workers during application, or when the decking material is so far gone that it will not furnish adequate anchorage for the new roofing nails, the old roofing, regardless of type, must be removed before applying the new roofing. The deck should then be prepared for the new roofing as follows:

(1) Make repairs to the existing roof framing where required, to level and true it up and to provide adequate strength.

(2) Remove all rotted or warped old sheathing (delaminated units in the case of plywood) and replace with new sheathing of like kind.

(3) Fill in all spaces between boards with securely nailed wood strips of the same thickness as the old deck; or move existing sheathing together and sheath remainder of the deck.

(4) Pull out all protruding nails and renail sheathing firmly at new nail locations.

(5) Cover all large cracks, slivers, knot holes, loose knots, pitchy knots and excessively resinous areas with sheet metal securely nailed to the sheathing.

(6) Wherever the roof sheathing abutts a vertical wall, such as at the intersection of the rake of a porch with a main wall, a fillet or cant strip of triangular section cut from a 2-inch by 2-inch should be installed at the intersection by nailing to the roof sheathing before applying the roofing. If metal flashing is used at such intersection, cant strips are not essential.

(7) Just before applying the new roofing, sweep the deck thoroughly clean of all loose debris.

FLASHINGS

Because roofs are more often than not complicated by the intersection of other roofs, adjoining walls or projections through the deck, such as chimneys and soil stacks, all of which create opportunities for leakage, special provision must be made for turning the weather at these points. Such construction is commonly called "flashing."

In principle, wherever two elements of the structure join, flashing provides that water descending from the surface of the higher element will be conducted over the joint to the surface of the lower element. This is easier to express than to achieve. Careful attention to flashings is very essential to good roof performance, regardless of the type of construction or the cost thereof.

Valleys exist where two sloping roofs join at an angle causing run off toward the joint. Because drainage concentrates at the joint, it is especially vulnerable. A smooth unobstructed drainage way must be provided with enough capacity to carry away the water rapidly. A somewhat similar situation exists where the rake of a roof abuts a vertical wall.

To avoid stresses and distortions due to uneven settling, chimneys are built on foundation wall footings or on separate foundations, and project through the house from cellar to roof without touching the framing at any point. Therefore, the flashing at the roof calls for construction which will allow for movement without damage to the water seal.

The drawings in this section illustrate typical applications of flashing, using asphalt roofing as well as metal for the flashing material. The correct application of flashing has an exceedingly important bearing on the successful performance of a roof.

There is not room here to discuss completely all of the various details that must be considered in the application of flashing. Instructions are available from manufacturers of asphalt roofing, the Asphalt Roofing Industry Bureau, 2 West 45th Street, New York 19, N. Y., and manufacturers of metal flashing materials. (See also Metal Products Section).

Applying Asphalt Roofing—Drawings in this section illustrate recommended methods for laying both asphalt shingle and roll roofing. Further details or data sheets are available from individual asphalt roofing manufacturers or from the Asphalt Roofing Industry Bureau.

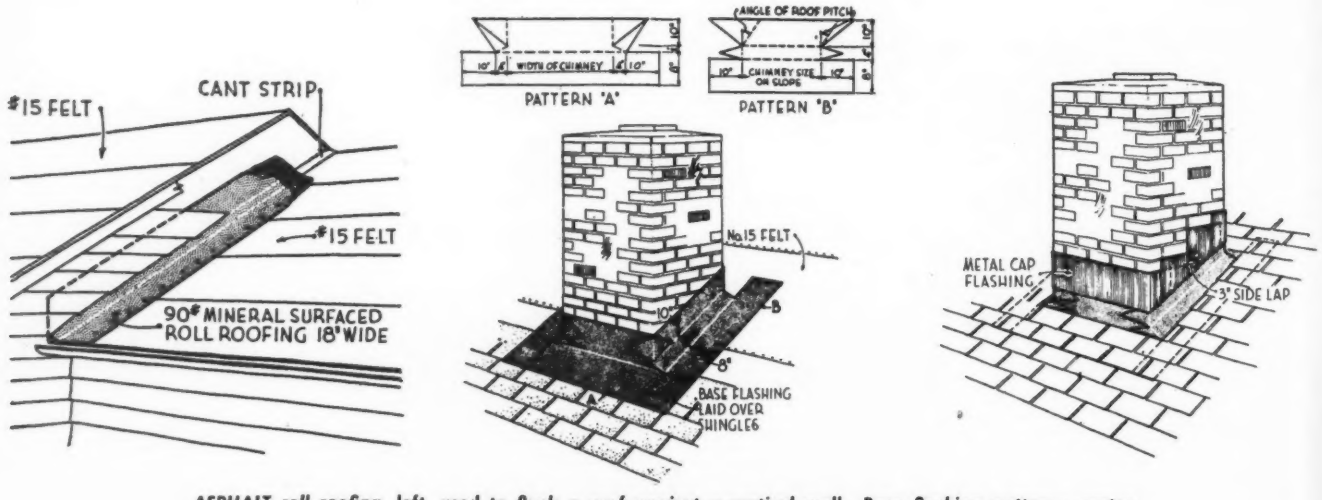
Nailing is extremely important in applying both asphalt shingles and roll roofing. Galvanized roofing nails having a large head of at least ⅜-inch in diameter and a shank long enough to penetrate to the under surface of the roof deck should be used. The number of nails to be used differs with the product. When applying individual hex reroofers, as well as giant individual shingles, use nails 1½-inch long over old asphalt materials and 1¾-inch long over old wood shingles. When applying roll roofing directly to a wood deck, use ⅞-inch or 1-inch galvanized roofing nails. Over old roofing, the nails should be long enough to penetrate the roof sheathing at least ¾-inch. Drive nails straight to avoid cutting the roofing with the edge of the nail head.

BUILT-UP ROOFING

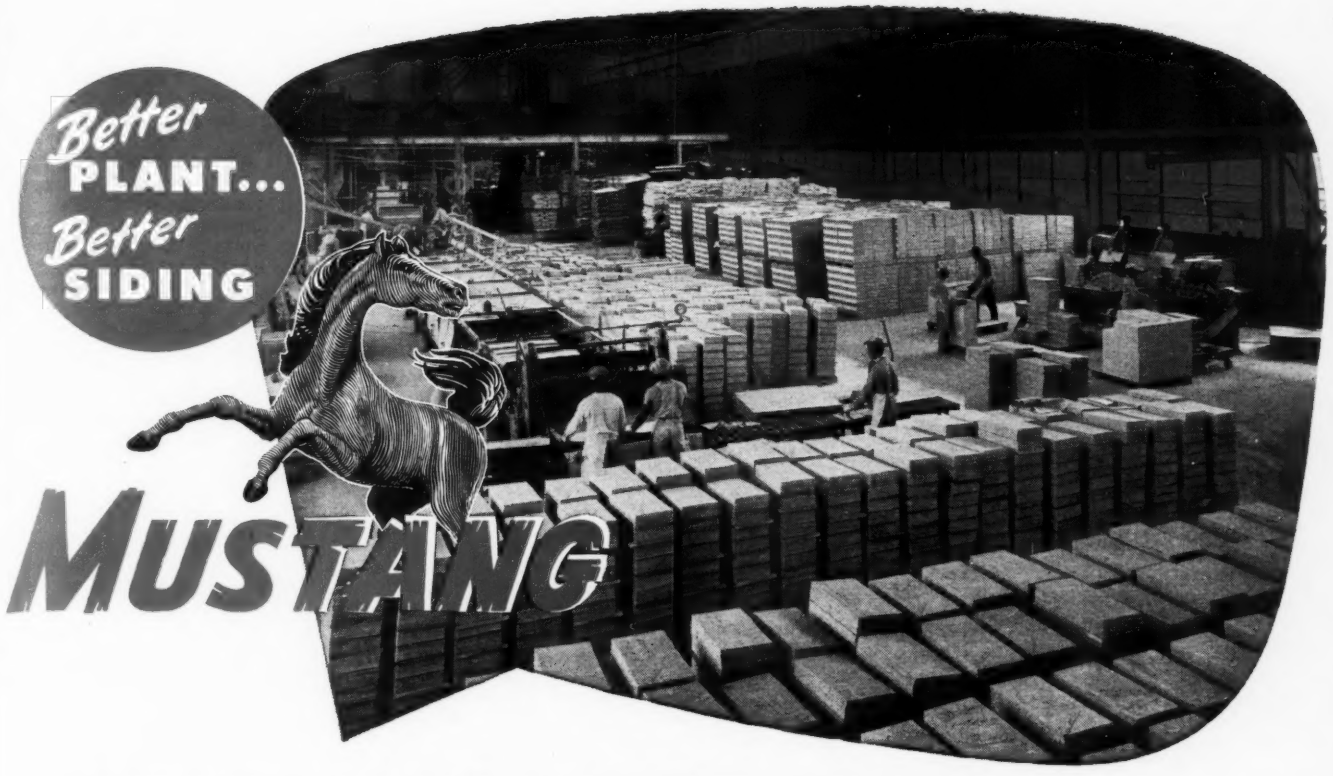
It is appropriate to add a note at this point on built-up roofing. Too frequently built-up roofing has been a market ignored by the dealer. In doing so he has closed his eyes to the many possible profit opportunities that exist in this form of roof construction.

Built-up asphalt roofing construction is widely used today on flat roof surfaces that have no slope, as is common in commercial, industrial and institutional building. The built-up roof is usually applied directly over a wood deck. In many types of industrial construction, it is applied over various forms of insulation. The insulation, usually in sheet or block form, is placed over the wood deck with a vapor seal between it and the wood.

The built-up roof is constructed by laying lapped layers of asphalt roll roofing, sealing the lapped joints with hot coal-tar pitch or cold asphalt adhesives. The top layer of built-up roll roofing can be finished in several ways:



ASPHALT roll roofing, left, used to flash a roof against a vertical wall. Base flashing patterns, center, cut and applied. Metal cap flashing, right, applied to cover base flashing.



New Specialized Plant Produces Highest Quality Asbestos Siding

QUALITY and economy come surely from specialization.

This new plant of The Asbestos Company of Texas was designed, engineered, and built for one specialized purpose—*to make the finest asbestos siding shingles at lowest cost.*

And that it does.

Mustang Siding is the latest total of man's experience in fusing asbestos — "Nature's Magic Mineral" — with Portland cement. In less than two years, Mustang has become the insisted-upon name for thousands of applicators and home-owners in ten states.

It's a superior siding shingle.

Superior for the applicator, because all shingles are alike in size, thickness, color and toughness.

Superior for the home-owner, because Mustang gives any home a low-cost "New Look" that lasts forever.

Superior for you, as dealer or distributor . . . because Mustang Siding upholds your reputation for handling only the best.

Write for descriptive folder and price list.

Applicators Say:

"practically no breakage"
"less leveling and squaring up to do"
"more uniform in size, thickness, color"
"Mustangs cut better"
"colors don't fade"
"please home owners"

The ASBESTOS COMPANY of Texas
ASBESTOS BUILDING MATERIALS
P. O. BOX 1082 HOUSTON 1, TEXAS

with a cold asphalt emulsion or with gravel, slate or slate embedded in asphalt or coal-tar pitch.

In most cases the dealer will prefer to work with the roofing contractor in the sale of material for built-up roofing jobs. The application of built-up roofing is a specialized field. It is usually handled by the roofing contractor, whether the job consist of new construction or a reroofing project.

The sale of built-up roofing materials, like the sale of other asphalt roofing products, opens a market for both hot and cold liquid adhesives, nails, flashing material and roofing tools.

ASPHALT ADHESIVES AND COATINGS

Adhesives

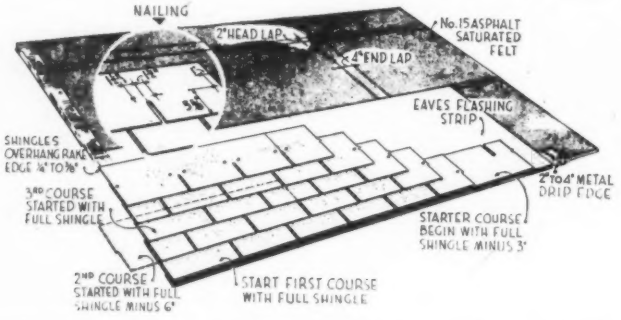
Cold liquid asphalt adhesives have been developed to seal the laminations of roll roofing in built-up construction and other lapped types of roof covering. The development of power spray and hose-lift equipment that brought the application time to a new low is resulting in the opening of a new market for dealers among local roofing contractors. Recoat jobs, of course, figure largely in the power application of this type of adhesive.

To the dealer, cold liquid asphalt adhesives have a made-to-order market in not only roofing and general contractors but in the apply-it-yourself trade as well. To the roofing contractor, this type of adhesive reduces fire hazards and reduces labor insurance costs. Fifty-five gallon drums make it easy to handle the adhesive when applying it by power. Five-gallon pails are available for squeegee application on small jobs.

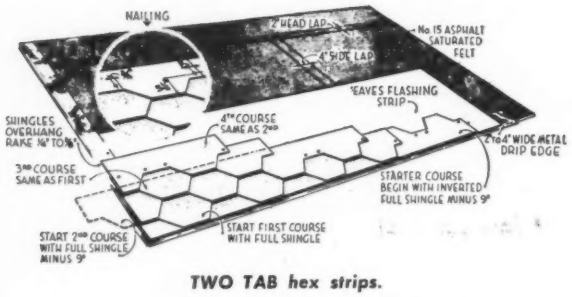
The apply-it-yourself trade, consisting principally of the farmer and the home owner, find the adhesive simple to apply, available in pint to 55-gallon containers, and useful for patching roof, gutter and pipe-joint leaks, furnace-base breaks, laying linoleum, resetting bathroom tile, waterproofing basements, walls, etc.

A small can of asphalt lap cement is usually supplied with each roll of asphalt roofing. This is used to waterproof the laps of the roll roofing, to seal the edges and to protect the nails.

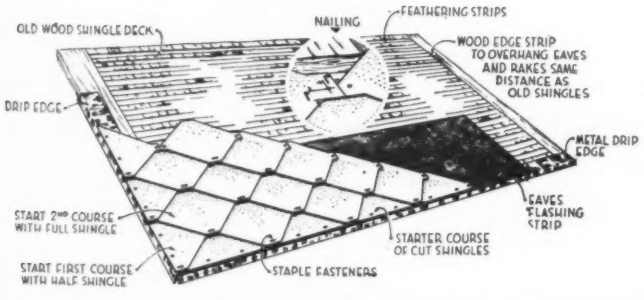
Plastic cement is a heavy blend of elastic asphalts containing preservative oils and asbestos fibres. It is used for flashings, for anchoring shingle tabs, for patching and repair work and many other purposes requiring a waterproof cement. It may be used for patching slate and metal roofs of all kinds as well as asphalt roofs. It is used for caulking boats, masonry foundation walls and coping.


NAILING
2" HEAD LAP
No. 15 ASPHALT SATURATED FELT
4" END LAP
EAVES FLASHING STRIP
SHINGLES OVERHANG RAKE EDGE ¼" TO ⅜"
2" to 4" METAL DRIP EDGE
3RD COURSE STARTED WITH FULL SHINGLE
STARTER COURSE BEGIN WITH FULL SHINGLE MINUS 3"
2ND COURSE STARTED WITH FULL SHINGLE MINUS 6"
START FIRST COURSE WITH FULL SHINGLE

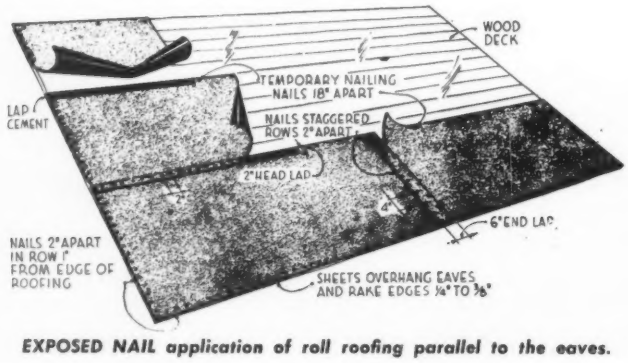
***THREE TAB** square butt strips. Cutouts are centered over the tabs in the course below.*


NAILING
2" HEAD LAP
No 15 ASPHALT SATURATED FELT
4" SIDE LAP
EAVES FLASHING STRIP
SHINGLES OVERHANG RAKE ¼" TO ⅜"
4TH COURSE SAME AS 2ND
2 to 4" WIDE METAL DRIP EDGE
3RD COURSE SAME AS FIRST
STARTER COURSE BEGIN WITH INVERTED FULL SHINGLE MINUS 9"
START 2ND COURSE WITH FULL SHINGLE MINUS 9"
START FIRST COURSE WITH FULL SHINGLE

***TWO TAB** hex strips.*


OLD WOOD SHINGLE DECK
NAILING
FEATHERING STRIPS
WOOD EDGE STRIP TO OVERHANG EAVES AND RAKES SAME DISTANCE AS OLD SHINGLES
DRIP EDGE
METAL DRIP EDGE
EAVES FLASHING STRIP
START 2ND COURSE WITH FULL SHINGLE
STARTER COURSE OF CUT SHINGLES
START FIRST COURSE WITH HALF SHINGLE
STAPLE FASTENERS

***INDIVIDUAL HEX** shingles, staple down type, applied over old wood shingles.*


WOOD DECK
TEMPORARY NAILING NAILS 18" APART
LAP CEMENT
NAILS STAGGERED ROWS 2" APART
2" HEAD LAP
6" END LAP
NAILS 2" APART IN ROW 1" FROM EDGE OF ROOFING
SHEETS OVERHANG EAVES AND RAKE EDGES ¼" TO ⅜"

***EXPOSED NAIL** application of roll roofing parallel to the eaves.*

Coatings

A good asphalt smooth surface roofing rarely wears out. It dries out. To assure long life, roll roofing should be coated every three or four years. Asphalt roofing coating gives old roofing a new rubber-like top surface that covers and seals all pits and cracks. It penetrates and resaturates dried out felt and composition roofing. It gives them new life. On metal roofs, it seals small rust holes and stops further rusting.

Cold liquid asphalt roof coating, the adhesive described above, is a thick black compound made from liquid asphalt, tempered to spread evenly and smoothly at temperature above 60 degrees. It is used for resurfacing roofs that are still in fair condition. It is used for cap-sheeting old roofs and for new built-up roofs, as previously mentioned.

Asbestos fibers are added to ordinary liquid asphalt roof coating to form asphalt fibrated roof coating. The asbestos fibers give the coating thickness and strength for recoating badly worn roof surfaces which need an extra heavy coating. Both types of roof coating can be applied without heat, either by mopping or by power sprayer. Before applying the coating, the roof should be thoroughly cleaned. Cracks, breaks and bad seams should be patched. Loose paper should be renailed. These roof coatings can be used on all types of roofs except wood shingles.

WOOD SHINGLES
(Western Red Cedar)

Most of the wood shingles used at the present time for roofs and sidewalls of buildings are of Western red cedar. Redwood, bald cypress and Eastern white cedar find use to a smaller extent. The heartwood of these species is resistant to decay.

Edge-grain shingles are much better than flat-grain shingles because they warp much less and withstand weathering better. Commercial western red cedar, cypress and redwood shingles of the No. 1 grade promulgated by the U. S. Department of Commerce are all heartwood and all edge-grain. For lasting service, the singles should be properly laid and nailed with corrosion-resistant nails. The thickest standard-grade shingles (4/2) have butts ½-inch thick and will last longer and give better service than those with butts 0.4 inch (5/2) or 0.45 inch (5/2-¼) thick.

Roofs are more severely exposed to weathering and decay than are walls. Only the No. 1 grade shingles are ordinarily recommended for roofs of permanent buildings. Shingles of lower grade may be suitable for side walls.

Sizes and Grades

Most shingles are manufactured in random widths with 14 inches the maximum in all grades. Three standard lengths are recognized—16, 18, and 24 inches. Shingles are packed in bundles, four of which contain a sufficient number of shingles to cover an area of one hundred square

"Saying so doesn't make it so," said Homer.

"LOOK AT THAT ROOF." Homer turned and glared at me. "I could *say* it's good for years, and you'd prob'ly believe me. But that doesn't prove it's so. Time'll do that . . . time and the weather." Then he grinned. "'course anything I said about that particular roof'd be fact anyway . . . it's a Bird Master-Bilt roof."

That's a good thought, Homer. Talk seldom proves anything. It's how the roof wears and keeps its beauty that counts. A good look at a Bird Master-Bilt shingle will prove that point right away. Mineral granules, deeply embedded; Bird thick-butt construction; heavy felt and shatter-resistant asphalt . . . the quality's there to feel, to see, to experience.

Judging from the record, Homer, a whole lot of people feel as you do . . . Bird Master-Bilt shingles have done a slick job, year in and year out, on all kinds of roofs. That's the way it should be . . . and that's why, over at Bird, we prove it first and say it afterward.

BIRD & SON inc.
BIRD PRODUCTS
Established 1795

East Walpole, Mass. *New York* *Chicago* *Shreveport, La.*

feet when properly applied. A roof square consists of four bundles, but to cover a square on a side wall by single coursing, only three are required.

16 Inch Shingles—5 butts to 2 inches—Shingles 16 inches long, the smallest size, must be so thick that five shingles, when measured across the butts (or thickest portion) when green must measure two full inches. As these shingles are packed in bundles with twenty courses on each side of the band-sticks, the bundle must therefore measure 8 inches in thickness when green. If measured after seasoning has occurred, an allowance of ¼ inch is made for shrinkage. In the lowest grade, an additional allowance of ¼ inch is made for variation in sawing.

No 1—16"—5/2" (Number one, sixteen inch, five [shingles] to two [inches]) shingles, also called "Five X" (written XXXXX) represent the best, or premium grade that is manufactured in this length and thickness. These extra fine shingles are intended primarily for roof construction, where the shingles should lie flat and tight and where there must be complete protection from rain-water driven by high winds.

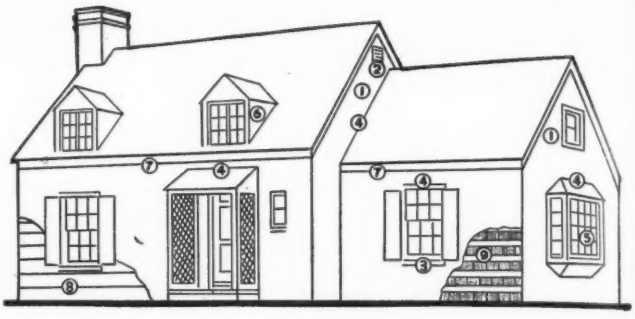
These shingles are all "edge-grain" or vertical-grain. That is, the annual rings are exposed on the flat surface of the shingle as narrow, straight bands of dense summer-wood closely crowded together and running parallel to the edges of the shingle. They show, therefore, a minimum tendency to expand and contract with changes in moisture content, and as they are keyed together by the pith-rays which run at right angles through the wood, they are highly resistant to splitting. No knots of any kind are permitted, and they must consist entirely of heartwood. No shingles narrower than 3 inches are permitted, and not more than 10 percent of the combined width of the shingles laid side by side (or "running" inches) in any shipment may be less than 4 inches in width. (This proviso applies to No. 1 shingles of all sizes except 24-inch.)

These shingles are of a superior grade for side walls on fine houses. On steep roofs (one-third pitch or steeper) they can be expected to have a life of more than thirty-five years under average climatic conditions; on one-fourth pitch roofs a life of at least 25 years can be anticipated. On side walls they will have an indefinite life usually greater than the useful life of the structure.

No. 2—Make good roofs for secondary buildings, as well as excellent side walls, and offer good service for over-roofing over old wood shingles. Are 12-inch clear from the butt.

No. 3—16-inch—5/2 shingles are suitable for uses where economy is the greatest factor, but when properly applied they will give good service. Farmers or others who wish to do their own shingling can use these shingles on secondary buildings to good advantage, for in such cases the additional time required for application is not an important factor. They can also be used as under courses in the renewal of side walls on smaller and less expensive homes, adding valuable insulation to the walls. They are much in demand for side walls on private garages, summer homes and smaller buildings on the farmstead, and they will outlast other side wall materials that sell at a much greater price. These shingles must be clear for the bottom half of their length. Good shingles in which the taper is a trifle too abrupt, resulting in "shims" or "feather tips", are permitted in this grade if they are at least 14 inches long. An average thickness of ¼ inch less than the standard bundle thickness of 8 inches is permitted, with the usual further shrinkage allowance of ¼ inch. None of the shingles can be narrower than 2½ inches, and not more than 30 percent of the running inches in any shipment may be less than 4 inches wide. (This last proviso applies to No. 3 shingles in all sizes.)

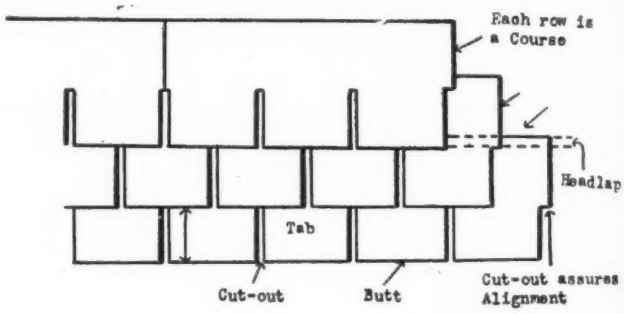
It will be noted that No. 1 shingles are of exceptional quality, but attention is directed to the fact that No. 2's and No. 3's are not necessarily "fall-downs" in the sawing of No. 1's. It is true, of course, that many shingles that do not quite measure up to the standards demanded in Grade No. 1 will fall into these secondary grades, but most of these latter shingles are manufactured from high-grade cedar blocks in which the angle of the grain is such that while excellent No. 2's can be cut, the waste produced in an attempt to manufacture strictly vertical-grain No. 1's would be inordinately high. These good shingles are not to be compared with the knotty second grades produced from other species, as even in the No. 3's at least the lower half of each shingle must be clear. As the sapwood of western red cedar is more durable than that of most other woods, the presence of sapwood at the edges of shingles in these grades, or in the covered ends, is of relatively minor importance.



TERMS COMMONLY USED IN SIDING CONSTRUCTION

1. Gable—2. Louver—3. Sill—4. Flashing—5. Oriel (Bay) 6. Dormer—7. Cornice—8. Sheathing—9. Filler Strips

COMMON ASPHALT SHINGLE TERMS



18 Inch Shingles—5 butts to 2¼ inches—No. 1—Are considerably thicker at the butt than 16-inch shingles, and are intended for use on the finest types of structures. With a long exposure and double-coursing with No. 2s or 3s of the same size, heavy shadow lines almost half an inch deep are obtained, making possible beautiful architectural effects. All clear, edge grain and all heartwood.

No. 2—Are not intended primarily for roofs, but they will give excellent service on secondary buildings such as larger barns, implement sheds and other farm structures. They are excellent for use on side walls. Are clear of knots 12-inch from butt.

No. 3—Are ideal for under-coursing and represent an economy grade that can be used for side walls.

24 Inch Shingles—4 butts to 2 inch—No. 1—With these much wider exposures are permissible. With double-coursing, using No. 2s or 3s for the under coursing, shadow lines a full inch in depth are obtained. No. 1's are of course strictly edge-grain, all heartwood and clear. No. 2's permit mixed grain and must be 16 inches clear or better and No. 3's must be 10 inches clear and better. Consult the grading rules for a complete description of each grade. All 24-inch shingles are packed with 13 courses in one end of the bundle, and 14 courses in the other.

APPLICATION OF WOOD SHINGLES

The first course of shingles at the eaves should be at least doubled, as the obvious minimum requirement of good practice. All shingles when laid on the roof should be spaced apart at least ¼ inch, and only two nails should be used for each shingle. The proper placing of these two nails is an important matter. They should be near the butt line of the shingles in the next course that is to be applied over the course that is being nailed, but should never be driven below this line so that they will be exposed to the weather. One to 1½ inches above the butt line is good practice, with 2 inches above as an allowable maximum. Furthermore, each nail should be placed not more than ¾ inch from the edge of the shingle at each side. When nailed in this manner, the shingles will

lie flat and will give maximum service. To repeat: regardless of the width of the shingle, only two nails should be used. Never drive nails into the wood, crushing it. Hold that last blow!

Proper Side Lap Is Imperative

The second layer of shingles in the first course should be nailed over the first layer in such a way that the joints in each course are not less than 1½ inches apart. This is the minimum "side lap" that is allowable, and if possible the joints should be "broken" by a greater margin. A triple layer of shingles in the first course is highly recommended for all first class work. The additional cost is negligible, and a triple layer is absolute insurance against leaks at the cornice, which is an important matter when a box cornice is used.

Joints Must Be Broken

The joints in all three layers of shingles in the first course should be "broken"; that is, they should not match up in any of the three courses. The butts of the shingles should project from 1 to 1½ inches from the first roof board, so that rainwater will be spilled into the gutter or to the ground without working down on the side of the building.

The second course should now be begun, the exposure being measured from the butts of the shingles in the first course. Some carpenters prefer to use a strip of lumber as a straight-edge against which to lay the shingles; others prefer to strike a chalk line and shingle to the line. Expert shinglers can often do a good job with only occasional reference to a line, using the blade of the shingling hatchet as a means or measuring the length of the exposure.

Joints in Alternate Courses

In applying successive courses, great care should be taken to insure the proper side lap, so that the joints will be at least 1½ inches apart in adjacent courses, and so that joints in alternate courses do not "line up." If attention is given to this matter, leaks in a shingle roof are an extremely remote possibility, for when shingles are laid with the recommended exposure (as, for instance, 5 inches for 16-inch shingles) there are three layers of very durable wood in the roof at every point.

Watch Heart-Centers!

In laying No. 2 and No. 3 shingles, which are mixed flat and vertical grain, the joints in the course below should never be directly below the "heart-center" or the center line of the flat grained shingle that is being nailed in the course above. Wide flat grained shingles of the lower grades, if entirely flat grained, should be split so that no shingles of this kind wider than 8 inches will be found in the roof. In laying No. 1 all-heartwood edge-grain shingles, no splitting of shingles is necessary, and such shingles can be laid with maximum speed.

Over-Roofing

The best and most practical method of re-roofing is to apply the new shingles directly over the old ones—a process known as Over-Roofing. In this way a double roof is obtained which tests have proven is actually stronger than the old single roof and which provides double insulation against heat or cold transmission. Over-Roofing assures protection of the contents of the building during application—sudden storms hold no menace. The customary muss or litter on lawns and shrubs is avoided.

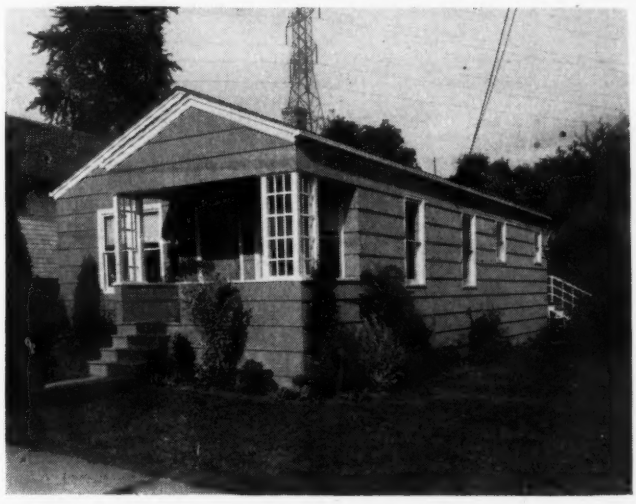
There are just a few simple steps involved in Over-Roofing. First, cut away and remove the old shingles for 3 or 4 inches along the eaves and along the gable edges. The shingles thus removed should be replaced with strips of lumber nailed flush with the eaves and gable edges. These strips should be of the same thickness as the old roof. The old valleys should be partially filled with other lumber strips and new valley flashings laid down. Along each side of the ridges there should be nailed a strip of bevel siding, with the thin edge down.

When these steps have been taken, the new shingles should be applied just as on a new roof, using 5-penny nails for 16-inch and 18-inch shingles, and 6-penny nails for 24-inch shingles. If the sheathing boards under the old shingles are spaced apart, there is no necessity of making sure that the nails for the new shingles strike these boards because a sufficient number will reach the sheathing to hold the new roof firmly and securely in place. And when the job is completed, it will be next to impossible to discern whether it is a new roof or a repaired one.

Flashing

Since most roof leaks in good roofs originate at the valleys or flashings, too great emphasis cannot be placed upon the vital necessity of using good material at these points. Tin plate or terne plate rust rapidly, unless well protected with paint. Galvanized iron is satisfactory, but care should be exercised when making sharp bends as there is a tendency to crack the zinc coating. Sheet copper is normally very resistant to corrosion if it doesn't come into contact with iron, steel or zinc. It is regarded as one of the most satisfactory materials for flashings and valleys. Sheet lead is sometimes used and has proven very serviceable under ordinary conditions.

On roofs of one-half pitch or steeper, the valley sheets should extend up on each side of the center line for a distance of at least 7 inches, and on steeper roofs at least 10 inches.



THE PLEASING effect in the above home is obtained with Western Red Cedar shingles for roofing and siding.

Nails

Do not use bright or blue steel nails in applying wood shingles. Galvanized nails should be used and preferably hot-dipped zinc coated nails. A wood shingle lasts only as long as the nail that holds it in place.

Stained Shingles

Commercial wood shingles can be purchased already stained, or they can be bought unstained and stained on the job. The commercially stained shingles have the advantage of convenience and may prove to be more uniformly and durably stained. At times requirements of availability, grade of shingles, special color, or price may make it desirable to buy unstained shingles and stain them on the job. Staining on the job is done to best advantage by dipping the shingles one by one to at least two-thirds of their length in the shingle stain and standing them up nearly vertically to drain and dry. It is also practicable, as far as decorative effect is concerned, to apply stains by brush or spray gun after the shingles are laid.

Shingle stains can be purchased in ready-mixed form or they can be mixed on the job from the necessary ingredients. Some commercial shingle stains contain coal-tar creosote in addition to other ingredients, for the purpose of imparting protection against decay.

ASBESTOS CEMENT SHINGLES

Asbestos cement shingles, like other asbestos cement building products, are made of a combination of asbestos fibers and portland cement, formed under great hydraulic pressure. They are fireproof and durable and will last indefinitely unless broken by impact.

Types of Asbesto Cement Shingles

There are four distinct types of asbestos cement shingles: (1) American method—laid in a square pattern much in the same manner as wood shingles; (2) Multiple-unit—provide the coverage given by two to five ordinary shingles; (3) Dutch lap—larger in size than conventional shingles and lapped both at top end one side; and (4) hexagonal type—applied in a diamond pattern and overlapped at top and bottom points.

American Method

American method asbestos shingles are recommended for all residences, up to the finest; for churches and institutions, and for all structures where distinguished appearance and durability are requisites.

Originally, the American method asbestos shingle was a counterpart of a high grade wood shingle in size and was similarly tapered. Today practically all are manufactured in strips or panels. That is, they are in sizes equivalent to from two to five conventional singles. When applied, however, they give the appearance of standard sized shingles individually laid. The strip shingles have two advantages; they are lighter in weight and they can be applied with considerably lower labor costs than single shingles.

American type asbestos shingles are offered in colors which harmonize with any natural surroundings. These include gray, blue black, red, green, blends and mottled. Some manufacturers have shingles which blend two or more colors. The exposed surfaces are textured to reproduce the appearance of authentic wood grains. The shingles may be obtained with either straight or staggered butts. Deep shadow lines are produced by the thickness of the shingles.

Most strip shingles are self-aligning, which simplifies application. Starters and ridge shingles are available from the manufacturers.

Multiple-Unit Shingles

Some companies manufacture asbestos shingles in large sizes which are equivalent in coverage to that given by from two to five ordinary shingles. When applied, however, they give the appearance of standard sized shingles individually laid. They are available in the colors and some manufacturers have shingles which blend two or more colors. Most of these shingles are self-aligning, which simplifies application.

Dutch Lap

Dutch Lap asbestos cement shingles are recommended for buildings where the conventional rectangular appearance is desired yet economy in cost is an important consideration. They are larger in size than the conventional shingle and are lapped at top and side. This method of overlapping reduces the amount of material needed. The consequent saving in both shingles and labor makes possible a considerable saving in cost.

Most Dutch lap asbestos shingles are produced with textures simulating those of weather-aged woods. They have much of the charm and beauty of the straight line American method shingle, while the design effects economy in the cost of the finished roof. They, too, are made in a variety of colors, including green, red, blue and gray. Additional colors are offered by some manufacturers.

Dutch Lap shingles can be laid with either a one-fourth or a one-third side lap; the head lap is fixed at three inches. The one-fourth lap naturally requires fewer shingles and less work and is correspondingly less expensive. The third-lap makes a heavier and tighter roof.

Hexagonal

Hexagonal type shingles offer the builder the advantages of asbestos cement roofing at the lowest cost. They are nearly square in shape but when applied they present a hexagonal or honeycomb appearance. The design has enjoyed widespread popularity for many years. It requires a minimum of material for overlapping. Hexagonal asbestos shingles are completely weatherproof when properly applied. At the same time they effect maximum savings in labor and material and consequently make a finished, enduring, fireproof roof at low cost.

Asbestos shingles of the hexagonal type usually are smooth surfaced. They are made in a variety of colors. The most popular again are gray, blue, green, red and mottled.

Hexagonal type shingles combine attractive appearance, durability and economy. They are favored for farm buildings of all kinds, for homes of low and moderate cost and for a wide variety of miscellaneous structures which need inexpensive maintenance-free roof protection.

Characteristics of Asbestos Cement Shingles

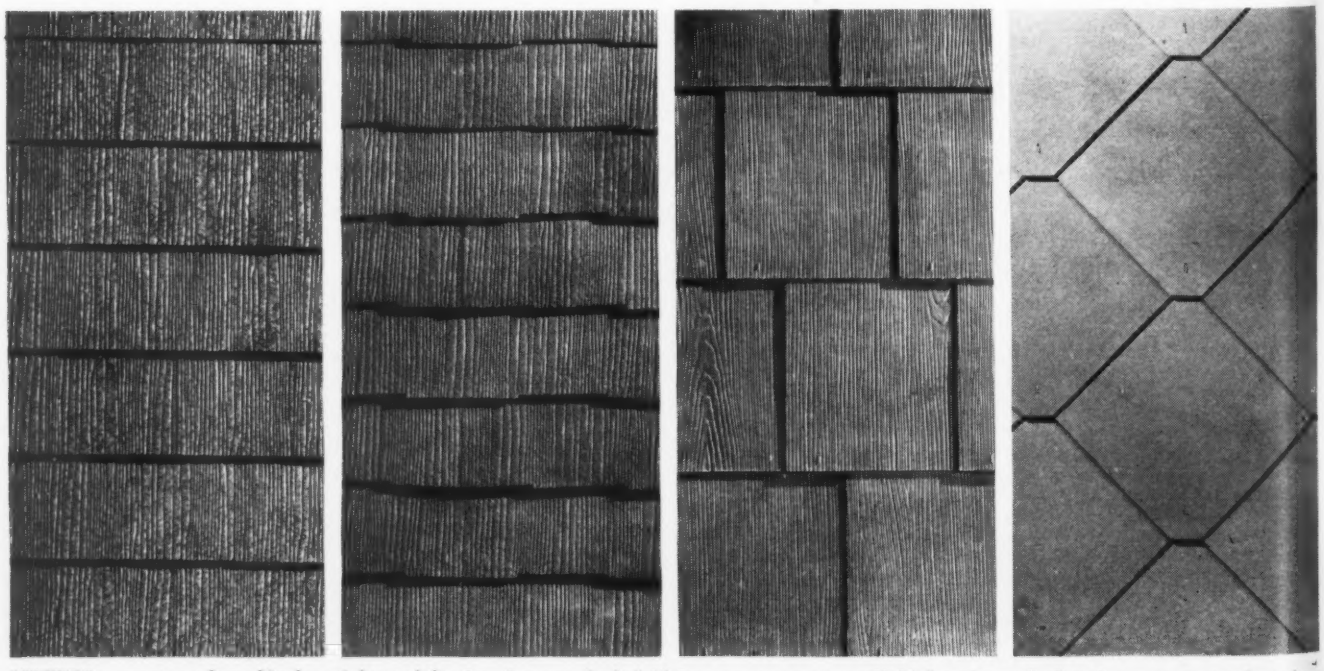
The principal selling points for all four types of asbestos cement shingles are their permanence, fire protection and freedom from maintenance expense. In addition. they have other characteristics which are attractive to discerning builders.

Fire Protection—Asbestos cement shingles are absolutely fireproof. They contain nothing that will burn. This means lasting protection against the menace of roof-communicated fires.

Permanence—Made of two practically imperishable materials, asbestos and cement, asbestos shingles are immune to rot and decay. They are unaffected by ice, snow, rain or exposure to salt air. They can be expected to last as long as the building to which they are applied.

Low Maintenance Cost—Since asbestos shingles are not affected by any of the usual causes of wear, they do not have to be replaced. That means there are no expensive repairs nor any periodic upkeep expense.

Beauty—The thick butts of asbestos shingles provide clean-cut shadow lines that give the roof interest and charm. The texture and grain of fine weathered wood



***ASBESTOS** cement roofing shingles, right to left: American method, laid in a square pattern; Multiple-unit, equivalent in coverage to that given by from two to five ordinary shingles; Dutch lap, also called the Scotch lap by some manufacturers, shown here with a one-third side lap and fastened with storm anchors, can be laid with a one-fourth side lap, headlap is fixed at three inches; Hexagonal, also known as the French method, three-inch headlap and sidelap, fastened with storm anchors.*

THE SECRET OF A GOOD ROOF...

Take good care of Alcoa Aluminum Roofing Sheet before you put it on and you'll be sure to have a good-looking roof. Store it under cover, off the ground, and standing on edge. Remember, properly applied Alcoa Aluminum roofs never need painting.

"THIS INSTRUCTION SHEET SURE WILL HELP US PUT IT ON RIGHT."
"YES I'M LAPPING THESE CORRUGATIONS JUST AS IT SAYS. MAKES 'EM GOOD AND WEATHERTIGHT."

When figuring for new Alcoa Aluminum roofs be sure to allow 6 inches for end laps. Side laps should be a minimum of 2 corrugations. Detailed application instructions are packed in every bundle of Alcoa Roofing Sheet. If you want extra copies of these instructions in either folder or wall chart form, write to ALUMINUM COMPANY OF AMERICA, 1723 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA ALUMINUM ROOFING SHEET

ALCOA ALUMINUM

is reproduced in the surface treatment. In addition, the attractiveness of the shingles is enhanced by a variety of colors, ranging from rich reds and striking greens to cool grays and whites.

Economy—The true measure of economy in asbestos shingles is to be found in the low cost per year of service. Since they will last as long as the building stands with little likelihood of any maintenance expense, they are one of the most economical of roofing materials which can be used on a permanent building.

Market for Asbestos Shingles

Asbestos shingles are recommended for homes in all price ranges. They are particularly well suited for coastal areas, where salt laden moisture is damaging to many materials, and to southern and western homes which are exposed to extensive periods of intense sunshine. Neither salt air nor intense heat has any deteriorating effect on asbestos cement. Asbestos shingles also are a favored roofing material for farm dwellings and service buildings. The attractive, substantial appearance of asbestos shingles and their durability recommend them for use on schools, churches, auditoriums and similar structures where roof areas are large and low upkeep is an important factor.

Asbestos shingles are equally adapted for use on new buildings or for application over old roofs. Usually the new shingles can be applied right over the old roof, thus saving the cost of removing the old shingles and giving the roof the added insulation value of the old roofing.

Asbestos cement shingles are sold by the square, which means sufficient shingles to cover 100 square feet of surface when applied according to the manufacturer's directions.

APPLYING ASBESTOS CEMENT SHINGLES

Asbestos shingles should not be applied on a wet or damp roof deck. When a job is left partially completed, felt should be laid over the upper applied course of shingles to prevent rain from running down underneath the shingles.

Lay shingles in dry weather. Ventilate new buildings while plaster is drying by opening windows in basement or first floor and attic. This removes damp air which might cause roof boards to swell or warp.

Extra care should be taken in extreme winter weather at lower portions of roofs against leaks caused by ice and snow "backing up" from gutters.

New Work

It is important the roof deck be in proper condition to receive the shingles. The lumber should be well seasoned, dry and of uniform thickness. Tongued and grooved boards of narrow width are best. Roof boards on new jobs must be laid close together. Nail heads must be driven down and any high spots or edges drawn down. All rubbish, nails, chips, etc., should be removed before application is started. A wood cant strip should be applied along the eaves, flush with the lower edge, to give proper pitch for the shingles. Wood lath or beveled siding is recommended.

For treatment at hips and ridges, hip and ridge shingles are recommended. They are cut to a flair or taper and make a more waterproof, more attractive and less expensive job.

Nail a furring strip along each side of hips and ridges, butting the strips at the apex of the ridge, in order to provide a nailing base for the hip and ridge covering. The roof shingles are butted against these furring strips, therefore they must be as thick as the shingles at that point and need not be over two inches wide, so they will be covered by the ridge covering.

On new jobs or on re-roofing jobs where the old roofing has been removed and sheathing made solid, the roof boards should be covered with one course of waterproof sheathing paper. Horizontal laps shall be four inches, and at hips, ridges and valleys felt shall be lapped 12 inches so double thickness will be insured at these points.

When cutting asbestos shingles, it is recommended an asbestos shingle cutter be used. These cutters can be taken up on the roof and have attachments for punching additional holes and notching. If a cutter is not available, asbestos shingles are easily cut by hand. Use an old chisel, a cold punch, or the blade of the hatchet. Score the shingle with the tool along a straight edge along the line to be cut. After scoring place the shingle over a solid piece of wood and bend along scored line.

Asbestos shingles can be sawed with a coarse toothed saw.

Irregular cuts or round holes are made by punching holes along the line of the cut and breaking out the piece which is to be discarded. There is a punch on the shingle cutter for punching additional holes, or they may be drilled or punched with a nail set or other suitable pointed tool.

Do not nail cleats to the finished surface of an asbestos roof. Exposed nail holes cause trouble and must not be permitted.

Care should be exercised to make sure valley flashings are of a width or height sufficient to meet the conditions encountered. The metal used must be the most durable and one which will meet the conditions in the locality in which the job is located. Open type valleys are most generally used. The edges of the metal should be turned ½ inch, thus forming a hem or water seal. The valley metal should be attached to the deck with cleats at the hem. Avoid driving nails through the metal and be sure it extends well up under the shingles on both sides. Edges of metal flashings and flanges also should be hemmed. Bed shingles in a layer of plastic asphalt cement when they lay over metal flashings.

Re-roofing Over Old Shingles

Two inch long galvanized needle point nails should be used when re-roofing over old shingles. Nail down all old shingles which are badly curled or warped. Waterproof felt generally is not required under asbestos shingles when they are laid over old wood or asbestos shingles unless the old roof is in bad condition. Missing or badly decayed wood shingles should be renewed and the surface brought to an even plane. Wood strips, beveled and equal in width to the butts of the old wood shingles are very satisfactory. If the top edges or corners of the asbestos shingles do not rest on the butts of the old shingles tilting will result. Nail wood lath or beveled siding of proper thickness against the butts of the old wood shingles to correct the condition. When this condition is encountered it will follow the course the full width of the roof.

Remove old boards used for finishing the hips. In their place nail securely new two-inch wood strips of the proper thickness, beveled as required to meet the condition, and nail to them the hip and ridge shingles.

Sometimes at the edge of the roof the old wood shingles are found to be in bad condition and the sheathing is not in very good shape. A substantial and more attractive job can be had by cutting away the old shingles and laying a new board four to six inches wide by ⅞-inch thick along the edges. This gives a solid base to which the new shingles will be nailed.

Build up old valleys with wood strips of a width and thickness adequate to bring them flush with the butts of the old wood shingles. Lay waterproof asbestos felt over hips, ridges and at valleys.

Asbestos Cement Shingle Accessories

Eave Starters, Ridge and Hip Shingles, Ridge Rolls—These items are made especially to simplify the application of asbestos cement shingles. They are purchased separately.

Roofing Felts—Felts saturated with asphalt or tar are often used to cover new roof decks before asbestos shingles are laid. The asphalt-saturated felt comes in a three-square roll; tar-saturated in four-square rolls. Both are 32 inches wide.

Nails—Galvanized needle-point nails are recommended. For new roofs use 1¼-inch nails. When reroofing over old shingles used 2-inch nails.

Asbestos Shingle Cutter—Dealers handling asbestos cement shingles should have several shingle cutters on hand for the use of customers. They cut the shingles quickly, accurately and neatly. They also have a punch for punching nail holes wherever necessary. These cutters can be used right on the roof.

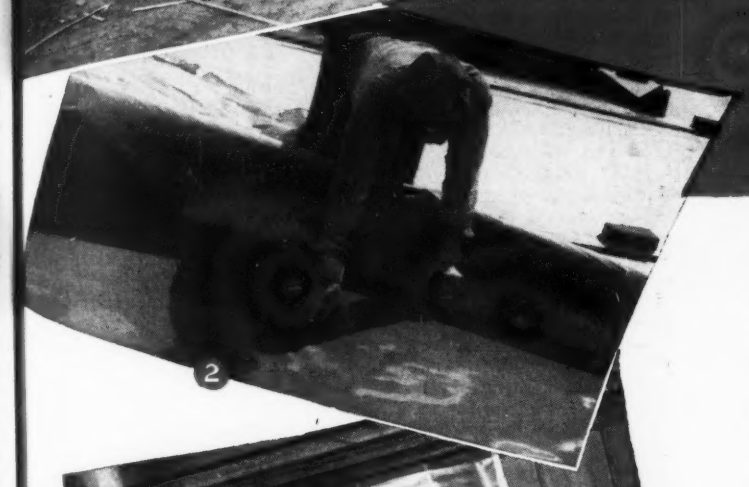
Ripper—Rippers are simple tools which may be used occasionally for removing a shingle that may accidentally be broken during application and discovered after work has passed that point.

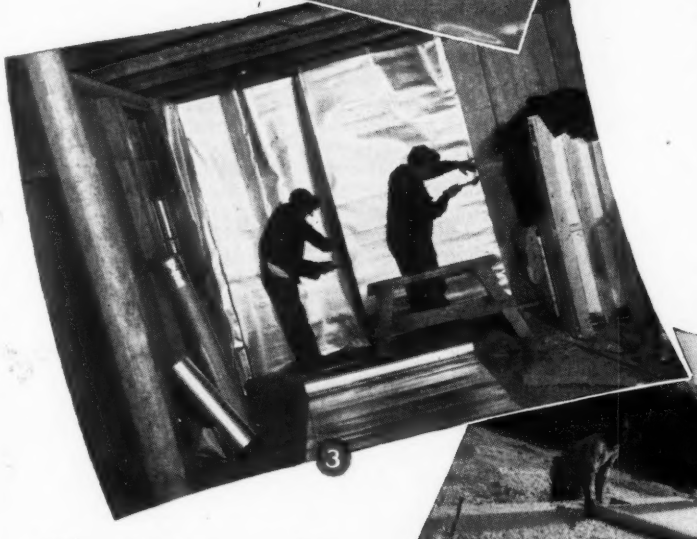
Storage

While still packed in bundles, whether in the yard or on the job, asbestos shingles should be kept absolutely dry. Moisture trapped between bundled shingles may cause discoloration due to efflorescence, or what ordinarily is known as blooming. Keep the bundles in a dry place, or if it is necessary to pile them outdoors, stack them on planks to

Richkraft

For Bigger Volume, Bigger Profits, Stock Richkraft's Complete Line of "Breather" Type, Reinforced and Duplex Building Papers





When you handle Richkraft building papers, here are a few of the advantages you'll find lead to bigger sales volume and more profits... as well as repeat customers and new business—

A complete line of building papers from one source. Richkraft papers range from a "breather" sheathing paper to Richkraft Skufpruf... the reinforced, heavy-duty, plasticized paper for the toughest jobs.

Roll-widths from 3 feet to 10 feet... Sizes to fit your customers' needs without waste or cutting.

Sales assistance designed to fit *your* sales problems.

Fill in the coupon below to get quick information and samples on the fast-moving Richkraft line of quality products.

2. (Center above) – *Curing and protecting floors with Richkraft Skufpruf... You can show your customers how to cover 40% more area with the same labor, using Richkraft 10-foot rolls.*

3. (Above)—*Silvercote Duplex applied to the inside face of the studs, provides an effective moisture-vapor barrier and reflective insulation IN THE SAME OPERATION FOR THE SAME COST! Skufpruf, Medium and Duplex are also effective vapor barriers.*

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ASBESTOS CEMENT siding provides a quality finish to new houses, and a "new look" to old ones.

keep them off the ground and cover them with roofing paper or a tarpaulin.

CORRUGATED ASBESTOS CEMENT ROOFING AND SIDING

For many years corrugated asbestos cement sheets have been used by industry as an economical, incombustible material for roofing and siding over skeleton construction. A growing appreciation of the product's unique values has extended its application to farm buildings, commercial interiors and home exteriors.

Corrugated asbestos cement sheets are made of the same materials as other asbestos cement products and possess the same natural properties that enable them to resist the action of the elements and other destructive forces. They are produced in corrugated form for additional strength and durability.

Corrugated asbestos sheets are a light cement gray in color and uniform in texture. Their light reflecting and diffusing properties are an aid to vision for interiors. For exteriors they help to reflect the heat of the sun. When applied as an interior wall covering, corrugated asbestos prevents, to some extent, the escape of radiant heat. The corrugations also have a definite acoustical value as an interior covering.

Standard size sheets are 42 inches wide. For strength reasons, they are engineered so that the material is thicker at the ridge and valleys than at the slopes. The average thickness is approximately ⅜-inch. As made by some manufacturers, the corrugations have an overall depth of 1½-inch and a 4.2-inch pitch (the distance from the crest of one corrugation to the crest of the next), with ten corrugations to a sheet. Sheets also are made with corrugations of 2⅝-inch, with 16 corrugations to a 42-inch sheet. They have an overall depth of 1-3/16-inch.

Stock sizes are provided in lengths ranging from 3 feet to 12 feet in 6-inch multiples. The dimensions of stock sizes are approximate but sheets cut to accurate size can be furnished on order. Sheets can be supplied cut to any desired width or length that can be cut from standard sizes. Curved sheets are manufactured to order.

Corrugated asbestos cement board is especially adapted to the building of one-story barns, now growing in favor as a result of recent developments in feeding and ensilage. For such construction, corrugated sheets are used over the entire exterior, roof and sidewalls. The interior lining may be of a similar material—the asbestos cement board previously described.

In the smaller types of farm buildings, corrugated asbestos cement frequently is used in combination with the flat asbestos board. In such cases the corrugated usually is used for roofing and the flat material for siding.

Corrugated asbestos sheets have been effectively used in the construction of hog houses, dairy barns, tobacco barns, corn cribs, machine sheds, and many other types of farm structures.

Corrugated asbestos sheets can be quickly and easily erected. They can be drilled with twist drills, fastened with screws or bolts, and sawed with a hand saw or a portable power saw with a carborundum wheel. Special fasteners are supplied in order to facilitate application over various types of framework.

Detailed application information can be obtained from manufacturers.

ALUMINUM ROOFING AND SIDING

With improved production methods and a tremendous post-war production capacity combining to bring aluminum within the scope of many new uses, the highly-skilled engineering staffs of aluminum manufacturers and fabricators are today giving increasing attention to the application of aluminum to building needs.

One result has been the development of a number of new types of aluminum roofing and siding. New aluminum roofing and siding products have been introduced in the past year and it seems probable that new and improved types of aluminum roofing and siding can be counted on to make their appearance in future years as engineering laboratories continue their testing and research in this field.

Types of Aluminum Roofing and Siding

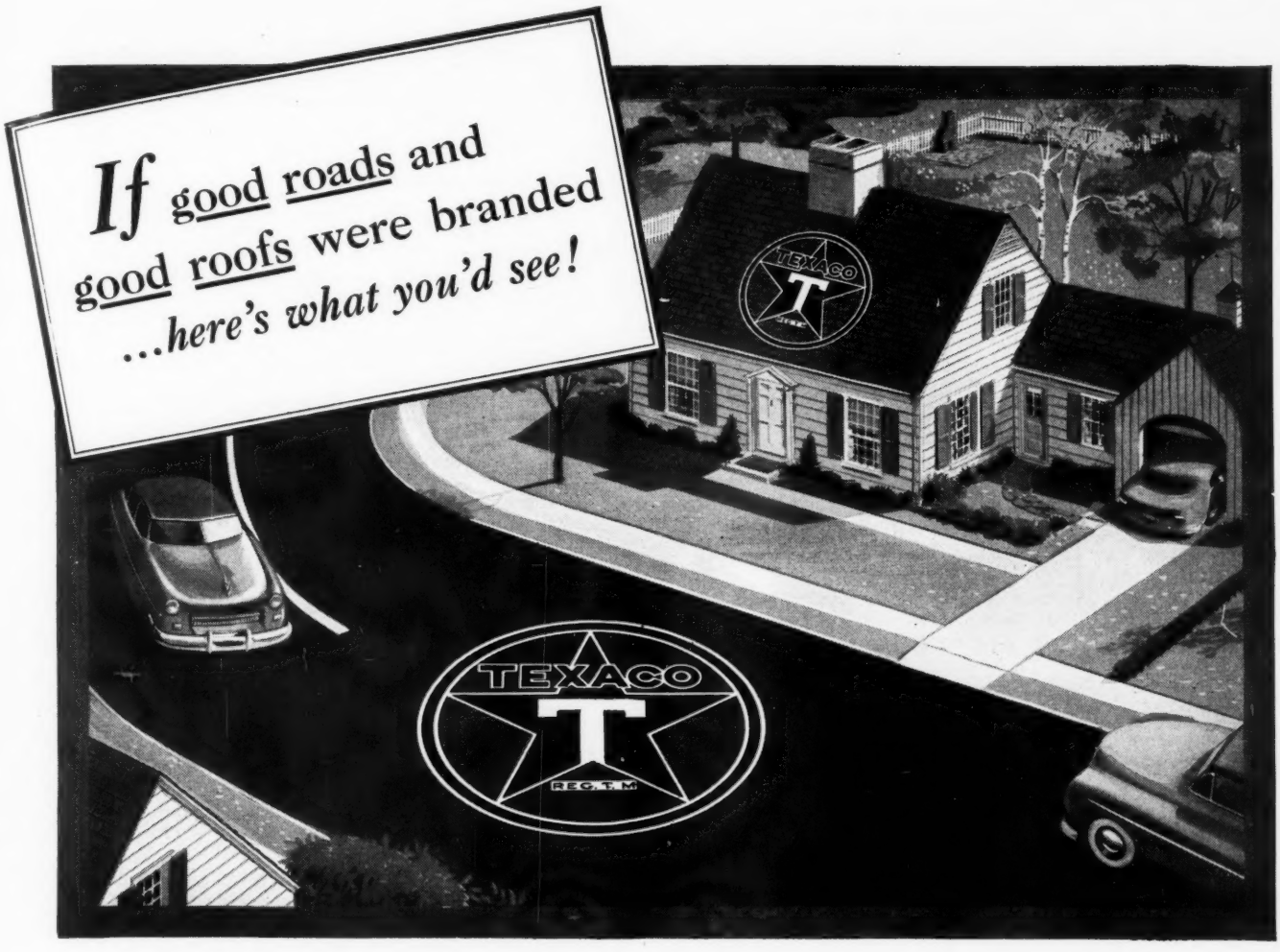
Over half a million farm buildings have been roofed with aluminum roofing sheet since the product was introduced several years ago. Only this month the third largest aluminum producing company in the nation introduced its aluminum clapboard siding and roofing which are produced in 10, 12, 14 and 16-foot lengths, with a curved face to increase strength and eliminate highlights and wrinkles. These products are prime-coated before shipment, are shipped 200 square feet to the nested box. In application, each piece of siding and roofing joins the next by a spring-tensioned joint.

Among the various types of aluminum roofing and siding now on the market are interlocking shingles, standing seam roofing (supplied by one manufacturer in 101 and 141 lineal foot rolls, 26½ and 20 inches wide, to cover two roofing squares), corrugated roofing with an interlocking seal, V-crimped roofing and siding, clapboard siding, and sheet siding crimped to look like clapboard.

Characteristics

Advantages that manufacturers point out for aluminum roofing and siding are these: fireproof, rust-proof, impervious to rot and insects, light weight, easy to handle, can be cut and worked with ordinary carpenter tools, will take any regular house paint (requires 15 to 20 per cent less paint than porous materials), will not split or check, is easily stored and goes into place fast in construction. There are no exposed nail holes to putty and it is not necessary to prime or paint the surface except in the tidewater or salt air sections. Due to its reflective properties, it provides considerable insulation.

WATER tight joint for aluminum siding is provided by the corner flashing. Slight overlap on outside face of flashing assures uniform appearance when completed. Any paint can be applied to the metal finish.



—because both are high quality asphalt—and TEXACO is one of the world's largest producers of high quality asphalt!

THOUSANDS of miles of highways are paved with *high quality* Texaco asphalt. And thousands of homes, farm and business buildings are roofed with *high quality* Texaco asphalt.

In a good road, crushed stone, carefully selected and graded, is combined with *high quality* asphalt—to produce a resilient, weather-, water- and wear-resistant surface. In a good roof, mineral granules, carefully selected, permanently colored, screened and graded, are imbedded in *high quality* asphalt—to produce a resilient, weather-, water- and wear-resistant surface.

Good roads and good roofs must take a lot of punishment. They can—when they are made with *high quality* asphalt, the greatest weather- and water-proofing element ever known.

And—Texaco, with its extensive petroleum producing and refining facilities, has available and can select the exact right grades of asphalt for every type of product. This asphalt *know-how* means mighty fine products for Texaco Roofing Dealers.

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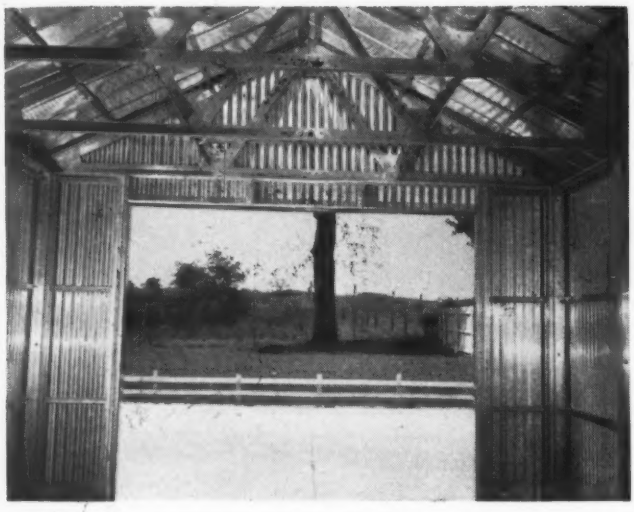
ASPHALT SHINGLES and ROOFING

SOLID ROOFING ASPHALT

MEMBER OF THE ASPHALT ROOFING INDUSTRY BUREAU



THE USE of aluminum as a roofing and siding material is graphically demonstrated above. Aluminum is widely used in home construction, as well as commercial construction.

Application

The metal siding can be applied over any surface where wood, asbestos, asphalt, brick or any other facing material is applied. Application is sufficiently easy that anyone without experience can apply aluminum siding. The only tools needed are a hammer, tin shears, a hack saw or a similar saw.

On new construction sheathing may be eliminated. This speeds construction and affords a substantial saving in cost. Studding should be fully corner-braced in accordance with FHA minimum standards. A blanket insulation should be installed between the studs with the tabs stapled on the outside. The aluminum siding is then applied directly to the studs without sheathing. Inside wall board insulation or plaster can then be handled in the customary way. Good practice includes a vapor barrier on the inside wall construction.

Do not use ordinary steel nails. Nor should ordinary galvanized roofing nails be used as the plated coating tends to chip off.

Aluminum nails are best for aluminum building products. Lead headed hot dipped zinc coated needle point nails are strongly recommended for use in rural areas. In industrial and seacoast regions the lead headed nail is not recommended, but the use of a chromate impregnated tape washer or neoprene washer is highly recommended. Nails should be spaced approximately 16 inches on center. Nails 1 inch long will suffice for almost all applications.

Steel and iron must not be allowed to contact the aluminum sheets at points where moisture may collect; or where poor sealing allows moisture to penetrate the roof; or where insufficient mechanical support or excessive loading may cause collapse. When aluminum and steel have moisture between them, a small electric current flows, causing holes or pits in the aluminum with subsequent deterioration of the aluminum sheet. Any means of avoiding actual metal-to-metal contact at those points where moisture collects will protect against this action. This can be done by providing a protecting sleeve or saddle of aluminum to cover the steel at the point of contact; by the use of a non-conductor such as building paper; or by painting with aluminum paint which provides an aluminum-to-aluminum contact at the moisture collecting point between the roof and the support. Steel nails or ordinary galvanized roofing nails must not be used for nailing. Aluminum nails are best.

Because proper erection and installation methods are necessary to assure long life for aluminum siding and roofing, it is imperative that your manufacturer's directions be carefully studied.

WOOD SIDING

Wood siding is one of the oldest and most popular of side-wall coverings. It is economical to apply, adapts itself to almost any type of architecture, combines structural strength with insulation qualities, is easy to apply and remodels easily, and gives a wide latitude in the selection of surface and trim colors.

Siding is made from those soft woods that stand up under the conditions of outside exposure. Red Cedar, Cypress, White Pine and Redwood make good sidings. Fir and Yellow Pine are also used to make drop siding.

Types of Wood Siding

Bevel siding, or lap siding as it is sometimes called, is the most popular type of siding used in house construction. Standard widths are 4, 5, 6, 8, 10 and 12 inches. The 8 inches and wider is often called "bungalow" or wide Colonial siding. Bevel siding is manufactured by "resawing" dry, square-edged surfaced boards diagonally to produce two wedge-shaped pieces. The pieces are usually 3/16 inch on the thin edge and ½ to ¾ inch thick on the other edge, depending on the width of the siding. This method of manufacture gives one planed face suitable for painting and a sawed face which is rough and may be stained for effect.

Clapboards are square-edged boards lapped like bevel siding.

Drop siding and Rustic siding are usually ¾ inch thick and 6 inches wide. They are machined to a wide variety of patterns. Drop siding has tongue and groove joints while rustic has shiplapped joints. Drop siding is heavier, has more structural strength, and because of its design has tighter joints. For this reason it is most frequently employed on farm buildings, garages and other buildings where it is employed without sub-sheathing or wood and is nailed directly to the wood building.

Vertical Siding usually consists of matched boards 8, 10 or 12 inches wide, or of random width, the joints of which may be shiplapped and moulded, matched with V joint or covered with battens.

Flush siding is dressed and matched boards laid "flush" against the sheathing.

Various types of unusual siding are made to secure special effects. One of the most common is thick siding made to give the appearance of logs.

Application of Wood Siding

Siding should be delivered to the building jobs as close to the time when it will be installed as possible. The lumber sheathing to which it is to be attached should be dry.

Bevel siding should be lapped according to width. For 4-inch siding a ¾-inch lap is suggested while that recommended for 10-inch is 1½-inch.

End joints in adjacent courses of siding should be staggered. They should be accurately cut and run vertically. In some cases the butt ends are cut on a bevel so the faces slightly overlap. With narrow siding the courses can be so arranged that the edges coincide with the bottoms of window sills and the tops of dry caps at window and door heads. Corners should be carefully mitered unless there is a vertical piece of trim at corners called corner boards against which the ends of the siding can be butted. To look well and keep out moisture mitered corners must fit closely and stay in place. Open miters are nearly always the result of using siding which has not been properly seasoned or has been exposed to moisture after delivery to the job.

Corner boards, sometimes used with bevel siding and very commonly with drop siding, should be thicker than the siding and should lie flat against the building paper with siding butting up to them. One piece should be wider than the other by the thickness of the piece so they will have the appearance of the same width when in place on the building. Corner boards should not be nailed on over the top of the siding. This produces pockets which permit the entry of water back of the boards.

When wood sheathing is used, it is not necessary to cut the siding to exact lengths to reach a stud or framing member; the joints can occur anywhere on the wall face as the siding can be nailed directly to the sheathing, although additional security is realized when the joints occur over the studs and are nailed through the sheathing into them.

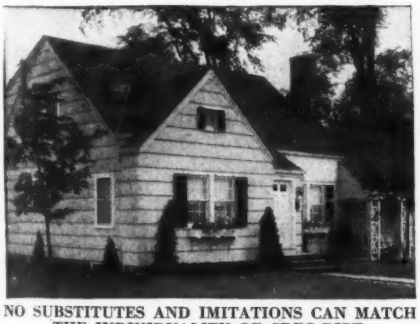
Nails cost little compared with the cost of siding, shingles and labor. Siding which will last for generations should be applied with nails which will last. Copper or zinc coated nails will hold the siding permanently. They are a good investment.

For ½ inch bevel siding 6d nails (six penny) are used and 8d for ¾ inch siding.

THIS IS THE YEAR TO SELL CREO-DIPT ZEPHYR RED CEDAR PROCESSED SHAKES

Lower priced wood sheathing has greatly increased the number of home builders who can afford Creo-Dipt Sidewalls

No substitute or imitations can match the individuality—the inviting rustic, homelike appearance of Creo-Dipt Zephyr Red Cedar Processed Shakes. With their rough, parallel grooves or ridges and distinctive long exposure, Creo-Dipt Zephyr Red Cedar Processed Shakes impart an appearance that ordinary smooth cut shingles can't approach. When stained, these grooves provide a pleasing gradation of different shades. Their heavy shadow line at butts and the wide variety of colors, that can't be duplicated by the limited colors available in imitation and substitute materials, add beauty and interest.



NO SUBSTITUTES AND IMITATIONS CAN MATCH THE INDIVIDUALITY OF CREO-DIPT RED CEDAR SHAKES

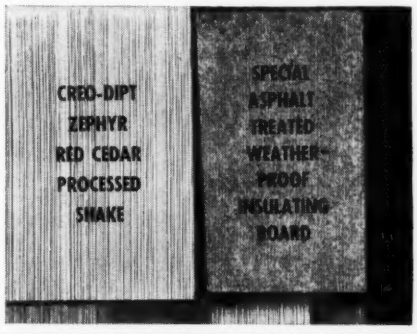
PUBLIC LEARNING THAT IMITATIONS AND SUBSTITUTES DON'T HOLD UP

Home owners who have seen how imitation and substitute materials deteriorate, crack, chip, fade—prefer Red Cedar Processed Shakes initially stained and preserved at the factory with linseed oil base stain. When stained every five or six years they will outlast the house they cover.

FAR GREATER INSULATION EFFICIENCY THAN CLAPBOARD OVER SHEATHING

In most localities on an average new 3 bedroom house, Creo-Dipt Zephyr Red Cedar Processed Shakes and Creo-Dipt Zephyr insulating board applied over wood sheathing will have about 30% greater insulation efficiency than clapboard over wood sheathing. On a residing job the saving is even greater. When applied over clapboard they will save more than $2,500 in painting and fuel bills over a 20-year period. This is figured on (1) 35% increase in insulation efficiency; (2) restaining shingles every 5 years vs. repainting clapboards every 3 years.

DOUBLE WALL CONSTRUCTION PROVIDES GREATER INSULATION AND AN EFFECTIVE WINDBREAK



DOUBLE WALL CONSTRUCTION OF CREO-DIPT ZEPHYR SHAKES AND UNDERWALL OF SPECIAL INSULATING BOARD

Creo-Dipt Zephyr Red Cedar Processed Shakes can be used for (1) *Single Coursing* at shorter exposure; (2) *Double Coursing*, i.e., Zephyr Processed Shakes applied over an undercoursing of low grade shingles; (3) *Double Wall*, i.e., Creo-Dipt Zephyr Red Cedar Processed Shakes applied over an underwall of Zephyr asphalt treated, weather-resisting insulating board.

Because it saves labor, Double Wall construction usually costs no more than Double Coursing, and is far superior. The insulating board undercoursing comes in sheets 4′ long—is easy to apply. Creo-Dipt Zephyr Red Cedar Processed Shakes are laid over this.

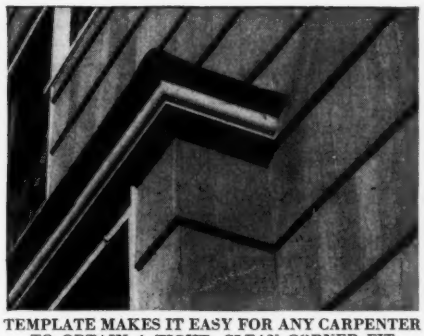
On new houses over wood sheathing, Double Wall construction has far greater insulation qualities than Double Coursing and, furthermore, provides an effective windbreak, the solid surface of Zephyr insulating board preventing the infiltration of air.

ANY CARPENTER CAN APPLY THEM

Unlike ordinary shingles which require cutting and fitting on the job, Creo-Dipt Zephyr Red Cedar Processed Shakes are already stained—have butts and edges trimmed so that edges are parallel and at right angles to the butt. The job is further speeded and simplified by the Double Wall method whereby the shingles are laid over an under wall of special insulating board.

BUILDERS SEE OPPORTUNITY TO INCREASE SALEABILITY OF HOMES

No other material holds so much charm for sidewalls as Creo-Dipt Zephyr Red Cedar Processed Shakes. No other material provides such color variations between roof, siding and trim. Buyers will cheerfully pay the slight difference in cost over ordinary clapboards when told the savings in painting and fuel bills.



TEMPLATE MAKES IT EASY FOR ANY CARPENTER TO OBTAIN A TIGHT, CLEAN CORNER FIT

TEMPLATE MAKES IT EASY TO FIT CORNERS

A template inserted into every third carton of Creo-Dipt Zephyr Red Cedar Processed Shakes makes it easy to cut the insulating board to the proper angle for corners before it is applied, after which, when the shakes are applied, it is a simple matter to trim them to a tight, clean corner fit.

100 SQUARE FEET UNITS

Each unit includes outer wall Red Cedar Zephyr Shakes, a package of Zephyr backing board for Double Wall construction or undercoursing shingles for double coursing construction, plus sufficient special, small head, rust-resisting nails for recommended exposure.

CREO-DIPT ZEPHYR DOUBLE WALL UNIT

DEALERS READY FOR BIGGEST STAINED SHINGLE BUSINESS IN YEARS

If you aren't prepared, write, wire or phone for particulars on the Creo-Dipt plan of selling exclusively through distributors and dealers. Creo-Dipt Co., Inc., North Tonawanda, New York.

WOOD SHINGLES AND SHAKE SIDING

Wood shingles and shakes are a popular and practical form of wall covering.

First and second grade shingles may be used for side walls when single courses are used and third grade shingles are used for the undercourse when double courses are on sidewalls.

The weather exposure of shingles in single courses should never be greater than half the length of a shingle, minus ½ inch, so that two layers of shingles will be found at every point of the wall. So, on single coursing, the maximum exposure to the weather for 16 inch shingles is 7½ inches, for 18 inch shingles 8½ inches and for 24 inch shingles 11½ inches.

Shingles on sidewalls are most often laid in what is known as the "double-coursed" method of application. This is done by using two layers of shingles on each course—usually a first-grade shingle or shake applied over an inside layer of low-grade shingles. The exposed shingle or shake completely conceals the inside course, and is laid so that its butt extends about ½ inch below the inner shingle to provide an effective drip-cap. Exposures of 12 inches to the weather are standard for 16-inch shingles laid double-coursed, 14 inches for 18-inch shingles, and 16 inches for 24-inch shingles. These wide exposures permit increased coverage, thereby reducing the amount of shingles needed to cover a given area. Another factor contributing to the economy of double-coursing is the use of a low-grade shingle for the inside and completely concealed course.

Gaining rapidly in popularity for double-coursed sidewall construction are shingles which have been re-manufactured into processed shakes. These shakes are attractively grooved on one surface, and have precisely paralleled edges. They are laid with tightly fitting edges, thereby almost completely eliminating the joints between the shakes, which often characterizes shingle sidewalls These processed shakes are marketed largely factory-stained, being available in a wide variety of attractive hues.

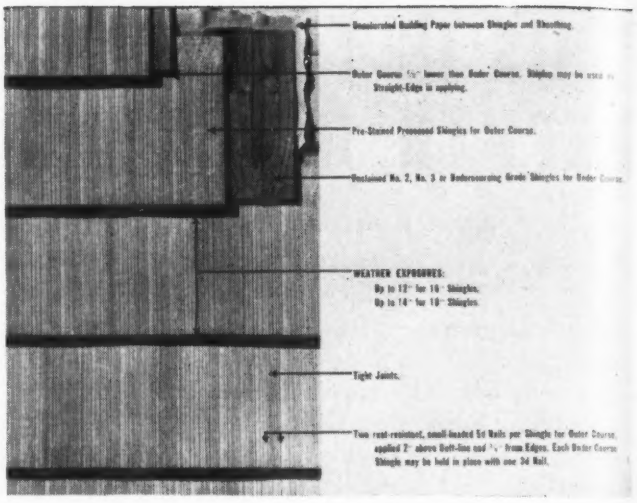
Sidewall shingles may be left unstained, may be stained or painted after application, or may be applied pre-stained as received from the factory. A good shingle stain should be quite thin so that it can be applied evenly and quickly and should be put on when the shingles are thoroughly dry. To secure the most satisfactory paint job, use pure white lead and oil or the highest grade of mixed paint.

In new sidewall construction both tight sheathing and spaced sheathing are used. However, spaced sheathing is

DOUBLE-coursed method of applying red cedar shingles on sidewalls provides beautiful, deep shadow lines.

used only in mild climates. Wooden sheathing should be used to give proper nailing. However, if insulating sheathing or gypsum sheathing is used, nailing strips, spaced the same distance as the weather exposure of the shingles, should be provided to give proper nailing.

Unsaturated building paper should be placed over the sheathing and under the shingles.



CONSTRUCTION detail of a double-coursed sidewall, machine-processed shingles applied over an under-course of unstained lower-grade shingles.

In applying the shingles, the butt lines or "shadow lines" should be even with the upper lines of the window openings and also, whenever possible, with the lower lines of such openings. When single coursed only two nails, each about ¾ inch from each edge should be used on each shingle. They should not be driven below the surface and are usually placed so as to be covered by the next course of shingles. Three-penny nails are used on 16 inch and 18 inch shingles and longer nails for shingles of greater thickness or lengths.

When shingles are applied in double-coursing, they are butt-nailed with five-penny, small heads, rust-resisting or zinc coated nails. Two nails should be driven into each top course shingle, approximately ¾ inch from the edges of the shingle. Use a third nail in the center of all shingles wider than 8". Apply all nails in a horizontal line, about 2" above the butts. Each under-course shingle may be held in place with a single three-penny nail.

The bottom course or row of sidewall shingles should be of double thickness and at least 6 inches from the ground.

On remodeling work shingles may be used to recover old sidewalls of other materials. They are simply nailed on over old siding. Brick walls are easily covered by furring the walls with 1 x 3 or 1 x 4 strips spaced the same distance as the weather exposure of the shingles. The nailing strips must be firmly fastened to the brick wall by means of anchors or special nails for this purpose. A wrought iron nail may be nailed into the mortar joint.

In applying over cracked stucco walls, the nailing strips should be attached with nails long enough to penetrate the stucco and the underlying sheathing. It is not desirable practice to apply shingles directly to the old stucco.

When over-walling around windows and doors, if the old ceilings are thinner than the new wall, moulding strips should be nailed flush with the edges of the old casings to which the shingles should be joined.

ASBESTOS CEMENT SIDING

Asbestos cement siding is a long lasting exterior sidewall covering for either new or old homes. Made of like materials, it has the same fundamental characteristics as asbestos roofing shingles. It is produced, however, in shapes, colors and surface textures particularly designed to give attractive appearances to exterior walls.

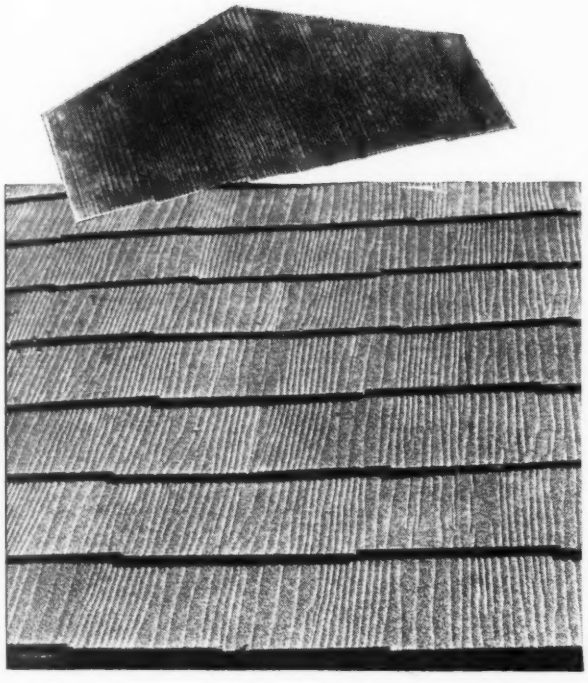
This product offers unique freedom from maintenance expense. Since siding is exposed to the full brunt of the weather its upkeep ordinarily is one of the major items of home upkeep. Asbestos siding is manufactured of two almost imperishable materials, portland cement and asbestos fibres, and is rocklike in performance. It will last indefinitely without requiring periodic surface coatings for preservation. Because of its inorganic nature it contains nothing that will burn or decay.

In general, asbestos siding is divided into two groups: one textured to reproduce the grain of weather-aged wood, and the other having smooth surfaces. The latter kinds sometimes are made with colored mineral granules pressed into their surfaces.

Asbestos siding may be obtained with straight butt lines, with a staggered butt line reproducing the effect of

Johns-Manville ASBESTOS ROOF SHINGLES

. . . American Colonial design . . . beautiful . . . easy to apply



• American Colonials (No. 607) are rigid roofing shingles made of asbestos fibres and Portland cement. Each shingle is actually a strip equivalent to 5 ordinary shingles. The unique shape makes spacing and alignment automatic.

Only 4 nails per shingle, in pre-punched holes, are needed. Where cutting is necessary a shingle cutter does the job right on the roof. Any carpenter or roofer can apply them.

They come in attractive colors with a pressed-in cedargrain texture and staggered butts. Hip and Ridge Shingles to match are available.

DATA

Size—30" long x 14" (at greatest width); uniform thickness.

Finish—Cedargrain texture; staggered butts.

Colors—Black Blend, Green Blend, Red Blend, Natural Gray

Application—6" exposure; 2" minimum headlap; 80 shingles per square.

Packaging—1/5 square per bundle.

Weight—290 lbs. approx. per square (270 lbs. approx. for Natural Gray).

Accessories—Starters (No. 636) and Hip and Ridge Shingles (No. 697) in matching colors. Order by lineal feet.

•

WHERE TO USE

Recommended for sloping roofs with a pitch of 5" or more. Used on new construction or for re-roofing right over old roofs.

SELLING POINTS

- ***Fireproof—Asbestos cannot burn***
- ***Weatherproof—Won't rot or rust, curl or split***
- ***Permanence of stone***
- ***Large coverage—Only 80 pieces per square***
- ***Automatic alignment—Easy nailing***
- ***Lowest cost per year of service***
- ***Beautiful colors—Distinctive appearance***
- ***The name Johns-Manville assures quality***

Address: Johns-Manville, Box 290, New York 16, N. Y.

shingles applied in the "thatch" method, or with wavy lines. Each produces distinctive and interesting shadow lines. The variety permits the selection of a siding appropriate to the character and surroundings of any building.

Sizes

Most asbestos siding is made in shingles 24 inches wide and 12 inches deep. They are lapped 1½ inches at the head, giving an exposed surface of 10½ by 24 inches. In addition, clapboards of greater width and sometimes shorter depth are made by some companies.

Styles

Siding of asbestos cement is produced in the following styles, although each style is not made by all manufacturers:

Wood-grain texture with straight edges.
Wood-grain texture with wave-line butt.
Wood-grain texture with staggered butts.
Tapered line texture with straight edges.
Smooth surface with wave-line butts.
Smooth surface with straight edges.

Textured asbestos siding is commonly made in gray and white. It is sometimes available in green and buff pastel colors. Smooth surfaced siding usually is made in gray and white. It also is produced in blended tones created by pressing mineral granules into the surfaces.

Characteristics

Asbestos cement siding was introduced to meet a demand for a durable, fireproof exterior wall covering which would need little or no maintenance. Its selling points include:

Durability—Rocklike in composition, asbestos siding is not affected by weather or other common causes of wear. It will last as long as the building to which it is applied, without curling or warping.

Fire Protection—Asbestos siding is completely noncombustible. It reduces external fire hazards to a minimum, especially when applied to a building with fireproof roofing.

Low Maintenance—Some materials exposed to the weather require painting or other preservative treatment every few years. During the lifetime of a building this maintenance may add up to a considerable sum—often many times the first cost of the siding. Asbestos siding does not require preservative attention of any kind. It becomes harder and tougher with age and exposure. Maintenance costs therefore are a very minor consideration.

Attractive Appearance—Asbestos siding is attractively styled. Textures and colors suitable for various types of architecture are available. Applied over worn sidewalls it gives modern charm and beauty to buildings formerly drab and unsightly.

Termite and Rodent Protection—There is no organic matter in asbestos siding, so termites leave it alone. Rats, mice and other rodents will not gnaw through asbestos cement, so they are no menace to this type of siding.

Economical in Cost—Asbestos siding is economical in price and inexpensive to apply. The savings they effect in maintenance quickly repay their cost.

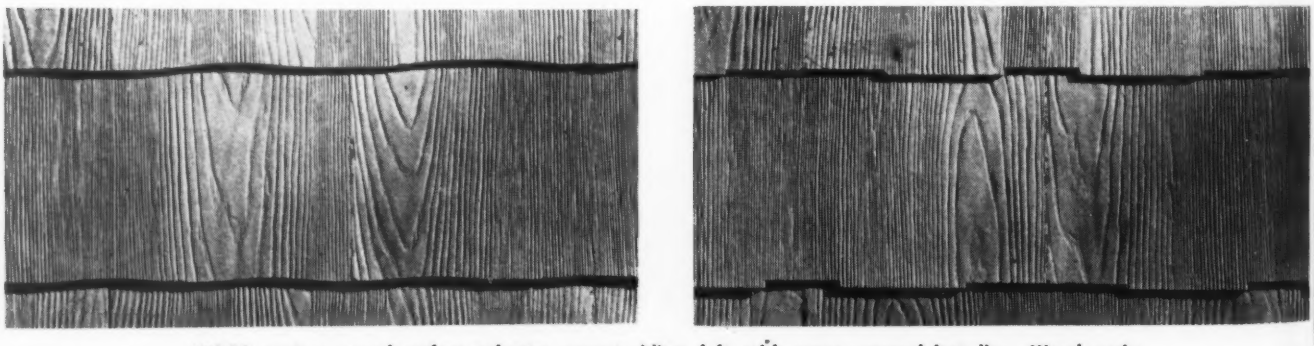
Market for Asbestos Siding

Asbestos siding earned its early reputation as a material for remodeling deteriorated old buildings into modern homes. In recent years there has been a growing trend toward the use of asbestos siding on new homes. It is well adapted to that use, as it can be applied right over the sheathing. This trend has been particularly noticeable in areas where climatic conditions are harmful to the siding materials ordinarily used in residential construction. The modernization field, however, will continue to offer a tremendous market for the product. More homes than ever are in need of such treatment as a result of wartime neglect. Asbestos siding is especially recommended for old and new buildings on farms, where the protection against fire and weather offered by asbestos siding is badly needed. In addition to the residential field, there are unlimited opportunities for the sale of asbestos siding for modernising stores, improving commercial and industrial building, re-siding churches and remodeling schools and institutions. While fire protection is an important consideration, freedom from maintenance expense is probably the point that appeals to the greatest number of purchasers.

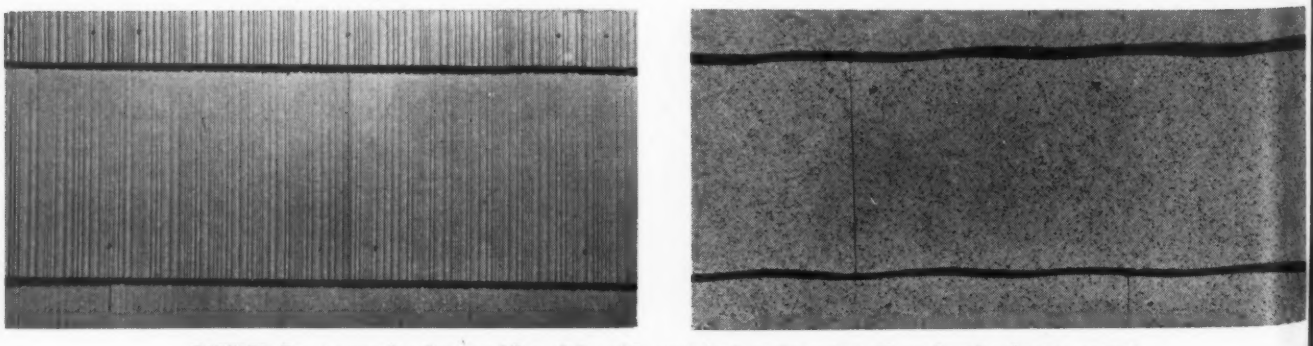
Asbestos siding is sold by the square (sufficient shingles to cover 100 square feet of space when applied in accordance with manufacturer's directions). Backer strips to be used behind the vertical joints are included. Special rustproof face nails are provided by the manufacturer. Headlap nails must be supplied by the user.

Application

Asbestos siding shingles should be handled carefully and kept in a dry place. Shingles on the job should be kept stacked on edge, on planks at least 4 inches from



WOOD grain textured surface asbestos cement siding, left, with wavy exposed butt line. Wood grain textured surface asbestos cement siding, right, with staggered butt line for thatch method.



TAPERED line textured asbestos siding, left, with straight butt line. Smooth surfaced asbestos cement siding, right, with wavy exposed butt line.

Only Dubl-Coverage Tite-On Shingles give you ALL these selling plusses...

DISTINCTIVE BEAUTY

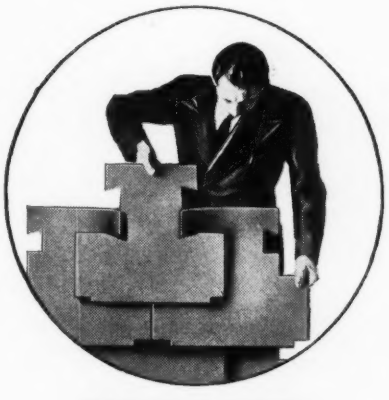
... Tite-On's interweaving design forms a "basket-weave" pattern adaptable to any style of architecture. Wide range of colors and harmonious blends.

TWO FOR ONE

... customers pay for one roof, get *double-thickness* protection... thanks to Tite-On's interlocking design. (Three thicknesses at certain vital points.)

GO ON FAST

... sales come easier when you talk up Tite-On's low application cost to prospects. The job's easier for you, too! As a clincher —tell 'em *all* nailing is hidden—nothing to rust!



TORNADO-TESTED

... the patented interlocking design makes a one-piece roof. Even hurricanes have failed to tear these shingles loose!

WE DO THE PRE-SELLING

... we're telling your best customers the dramatic Tite-On story with *consistent* national advertising. Get behind it—and get more roofing business!

The RUBEROID Co. *Dubl-Coverage* **Tite-On Shingles**

Building Materials for Home, Farm and Industry • Executive Offices: 500 Fifth Ave., New York 18, N. Y.

the ground, not more than four tiers high. They should be covered with waterproof paper or tarpaulin to protect them fully from any moisture or dampness.

Water running over unprotected wood sheathing, wood trim, wood gutters, and then over asbestos siding shingles may stain the shingles. To minimize such a possibility, shingles should be laid in dry weather and a given wall area—from base to top—completed as quickly as possible. Wood trim should be given at least a prime coat of paint. Gutters or eaves should be in place. Nails, brackets, etc., which are liable to rust should be painted or otherwise protected to avoid staining from this source. Copper gutters and leaders, flashings, fly screens, and similar accessories, which may also be the source of stains, should be periodically coated with dilute spar varnish.

Remember that siding shingles are for vertical walls **only**. They are not designed for roof surfaces.

A layer of waterproof felt or waterproof backing board should be applied to the area to be sided before the asbestos siding is put on.

Joints are protected by the use of felt backer strips, furnished with each square of shingles. When re-siding, 1 pound of 2-inch galvanized needle-point nails per square are required; over new work, ¾ pound of 1¼-inch nails.

Asbestos caulking putty should be applied, before asbestos shingles are placed, at all mitered corners and wherever the shingles butt against wooden trim, masonry or other materials. Care should be taken in applying the putty to avoid smearing the face of the shingles.

In using a shingle cutter on a job, waste is avoided and a more efficient job is possible if the cutter is tested before starting. Cut a shingle in half lengthwise and examine both pieces for cracks. If cracks are found, a little more opening is required between the knives. When cutting requires too much pressure, the knife edges should be slightly closer.

In re-siding work, the existing wall surfaces should be as smooth, plumb and true as possible. All loose shingles, clapboards, etc., should be securely nailed. Beveled wood strips, commonly called "horsefeathers", are obtainable—and these can be applied to even up the wall surfaces.

When existing siding has thick butts, it may be necessary to apply two layers of beveled strips at some course lines to provide a solid bearing. Lap the ends of beveled strips at building corners.

When stucco walls are in good condition, asbestos cement shingles can be put on over the stucco by first applying wood nailing strips. If the stucco is not in good condition it should be removed—also all nails, wires or other projections—and the sheathing covered with asbestos asphalt felt or saturated rag felt.

Where the use of asbestos siding shingles over old siding brings the finished wall surface out beyond existing window and door frames, new staff moulding should be provided.

Adequate flashing should be applied over all window and door openings and a suitable drip edge provided under all openings.

ASPHALT BRICK SIDING

Within the last few years some roofing manufacturers have been making an imitation of brick in roll form. It gives the effect of "wire cut" and standard brick laid up in combination, with sharply defined black "mortar joints" between the bricks. It is easy to apply.

The most recent development is insulated brick siding in brick and stone design. It is made on a base of ½ inch insulation board and has a surface of asphalt and mineral granules similar to that on asphalt shingles. It provides insulation against heat and cold as well as protection against fire and water. Complete directions for applying are contained in each bundle.

BUILDING PAPER

A small but important item in the lumber dealer's yard is building paper. The reason for the importance of building paper from a dealer's standpoint is because of its many uses 12 months out of the year. Building paper is sold under many trade names by many manufacturers. It generally consists of two sheets of kraft paper with asphalt in between and very often is reinforced with cotton or jute string or sisal fibres. Good building paper is treated in such a way as to resist scuffing, shrinkage,

***IF FRAMEWORK** is sturdy, even the oldest houses can be given a youthful appearance by over-roofing and over-walling.*

dry rot and mildew. A good method of determining the effectiveness of building paper is to tear it. If it is strong and tough, you can be sure that it can be applied without danger of being torn.

Its primary use, as its name implies, is over sheathing in residential construction where it prevents the infiltration of moisture, dirt, and wind into the interior of the wall. Other residential application include dry sheet under roofing, between the sub and finished floor, the curing and protection of newly laid concrete and over the sub-fill. Building paper in wide widths is the contractors "natural" for the protection of building materials stored at the job site in place of higher priced tarpaulins.

Building paper is used very extensively in the farm field for a number of uses. These include temporary silos, covering baled or stacked hay, lining poultry houses, to name a few.

Experiments recently conducted at the University of Pennsylvania under the auspices of the Federal Housing Administration have proved that building paper when used in sidewalls of a residence need not be of the porous or breathing type. These tests have shown that on an uninsulated house, insofar as condensation alone is concerned, that it makes no difference what type of building paper is used. These tests also show that on an insulated side wall, a vapor barrier is essential, and if a vapor barrier is used it should not be more porous than the sheathing paper.

Building paper is offered in rolls ranging in widths from 6 inches to 84 or 96 inches wide—also in many instances it can be obtained in blankets or covers of much wider widths.

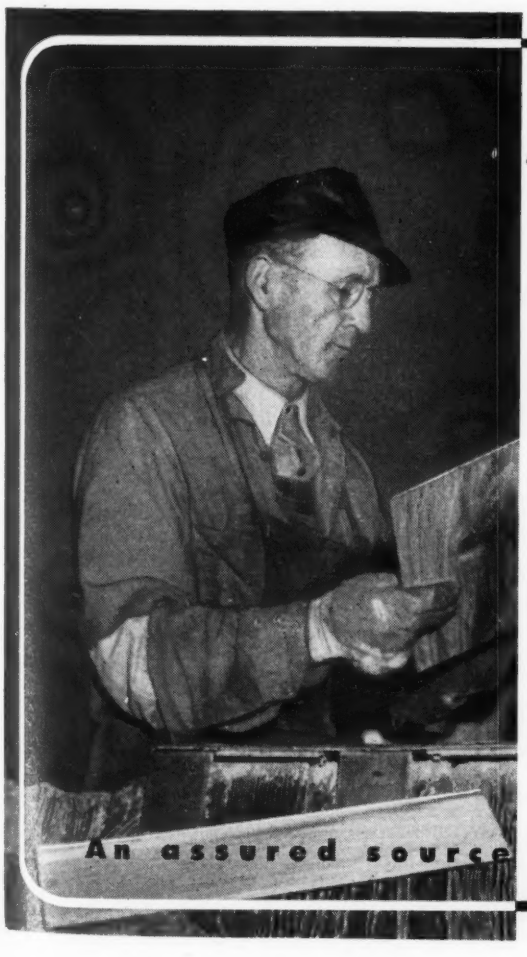
DISTRIBUTION OPPORTUNITY

With the softening of the lumber market, wholesalers and line yard operators are finding it profitable to fill out their merchandise lists with items of assured turnover. These larger concerns are adding Colonial Cedar Company's line of stained cedar shingles, processed shakes, handsplits and stains — with very satisfying results.

Colonial Cedar originated the process for manufacturing grooved cedar shakes in 1918, and is the leader in the field. Only outstanding distributors are considered, and complete merchandise materials are available with opening orders. Panels, color fans, color books and newspaper mats are included.

Although initial investment is small, reorders will run to considerable dollar volume. Wholesale distributors interested in particulars should address their inquiries direct to the Colonial Cedar Company, 600 West Nickerson Street, Seattle 99, Washington.

THE COLONIAL CEDAR LINE of nationally known Fitite Shakes, Stayon Stains and Stayon Stained Cedar Shingles makes an attractive quality display. This one line will give dealers complete coverage in the market for roofs and sidewalls of new construction and remodeling jobs.



'Mac' says, "it takes know-how"

Peter McDonald, a sawyer for 53 years, can tell you it isn't easy to cut shingles properly. It takes a lot of know-how.

This know-how when applied to the finest red cedar blocks means one thing—quality.

Portland Shingle Company combines both skilled craftsmanship and the finest red cedar in Portland Brand Red Cedar Shingles and Skookum Tru-Cut Shakes. Five mills located in the heart of Red Cedar Country maintain a constant supply of fine Red Cedar logs. Orders are filled promptly.

When you order, know you are getting the best!

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PORTLAND SHINGLE CO.

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CHAIN OF COMMAND!

When you sell the complete line of Bird building materials . . . you establish a *chain of sales command* for satisfaction, dependable service and quality . . . and extra profit!

THE ARCHITECT . . . Triple coverage, deluxe shingle with extra heavy butts approximating slate in caliper . . . coarse granules, rugged and handsome. The Architect is the final touch of beauty and distinction for fine homes . . . yet it's priced in the asphalt shingle price range! East Walpole plant only. For similar features in a fine granule shingle, ask for the #27 Master-Bilt shingle, at our Chicago plant only.

MASTER-BILTS . . . Famous shingles with *Bird* thick-butt construction (extra layers of protection on exposed butts where it counts!), heavy shadowlines and strong lasting roof protection. Available in Master-Bilt or Master-Bilt Weather-Tex designs in the widest range of colors and blendes ever offered . . . your customers will find the *exact* blende they want!

GIANT INDIVIDUAL AND TRI-TAB HEX SHINGLES . . . two other popular designs with famous Bird quality, long life . . . and distinctive appearance.

19" PAROID AND PROSLATE . . . The roll roofing that's tougher than tornadoes . . . concealed nails and sealed lap application locks Paroid or Proslate on to stay . . . no popping nails, sealed against inside or outside wind pressure. Be sure to stock a complete line of Bird mineral and smooth surfaced roll roofings . . . there's one for every purpose! And don't forget Neponset Black Vapor Barrier . . . positive vapor protection for modern building.

INSULATED SIDINGS . . . Bird pioneered and still leads this field . . . Bric, Stone and Shingle designs add distinctive beauty to homes everywhere . . . *and* insulate them with long lasting protection at the same time. Available in many handsome blendes and colors . . . be ready for the steadily increasing demand for this double duty siding . . . and for Bird roll type sidings.

CEMENTS AND COATINGS . . . A thousand and one uses in every building make Bird Cements and Coatings profitable and easy to sell. Bird top quality asphalt, carefully controlled formulas and wide experience in the manufacture of cements and coating assures your customers of lasting performance and satisfaction.

Write us today for full information about the complete Bird line . . . the Bird *chain of sales command* that brings you profit when you sell the best . . . when you sell Bird building materials. Bird & Son, inc., Dept. CD, East Walpole, Massachusetts.

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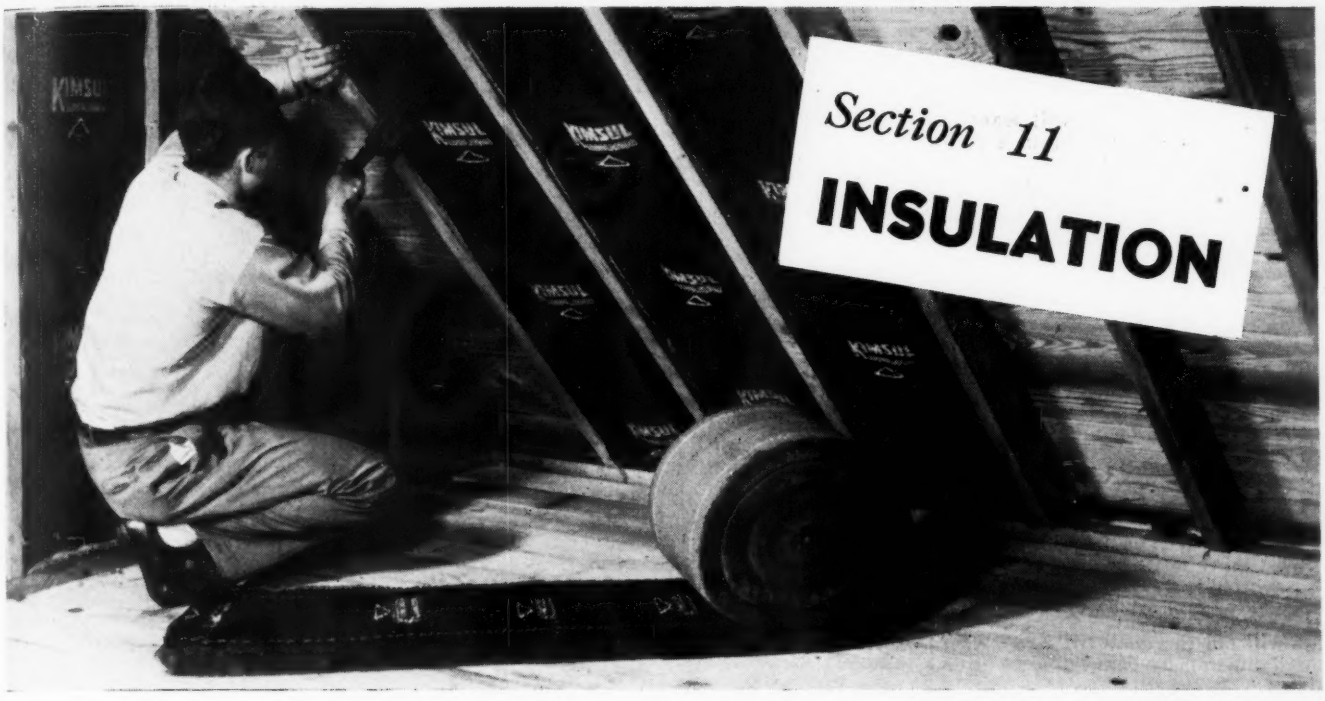

DURING THE PAST 30 years insulating materials have become fundamental building products, particularly in the light construction field. Few new homes, farm buildings, or similar structures are built without them; and each year hundreds of thousands of older buildings are being insulated to provide the additional comfort and the savings in fuel bills that are afforded.

Engineering studies, by universities and by the research departments of manufacturers have proved many advantages of insulation, and have developed a wide variety of materials to an amazingly high degree of efficiency.

A fully insulated dwelling reduces heating costs materially. A study by the University of Illinois shows that 49 of 104 fuel units required to heat a typical one-story brick or stucco veneer or frame home can be saved, if the house is equipped with storm sash, 4 inches of insulation between the attic joists, and a 2 inch blanket between the studs or furring from foundation to attic.

Structural board insulation products (sheathing and lath), provide similar savings, as well as the other advantages outlined in these paragraphs.

Investigations by agricultural colleges throughout the country have proved that fully insulated animal buildings result in substantial temperature increases due to body heat radiation, with an important improvement in animal health and productivity.

Not only does an insulated building prevent heat loss in winter, but it seals against heat transfer from the outside in the summer. An insulated dwelling requires redecoration less frequently; and in all structures insulation provides a vapor barrier against condensation.

For the retail building material dealer, insulation is an important line of merchandise. It has become a fundamental part of his overall sales and service program.

HOW DEALERS SELL INSULATION

The dealer should and can "cash in" now on new homes, on structural improvement sales and in the farm market. Insulation is a practically definite requirement for any new building, and, because it has become just as much a part of building materials as sheathing or plaster base, it should be stocked, displayed, and promoted by the dealer.

The sales will increase his dollar volume. The gross and net profits will equal, if not exceed, those on most departments. Storage requirements are simple. Handling is convenient as all insulating material is packaged in standard size cartons or bags.

On new construction many general contractors prefer to sub-contract their insulation rather than put it in with their own labor. Therefore, dealers who have been most successful in the sale of home insulation have operated more or less generally along these lines:

(a) They have made arrangements with one or more handy men outside their own organization to take care of the insulation at set prices per square foot, or

(b) They have one or two men within their own organization, generally yard men sufficiently handy to do this type of work. It doesn't require any unusual skill to install Batt type insulation. Such a setup has many advantages:

(1) It enables the dealer to compete successfully with insulation contractors who buy direct from manufacturers.

(2) It enables him to get the full markup on his material and, at the same time, at least break even on his labor cost. Depending upon the competitive situation, it is often possible for the dealer to make a profit on the labor.

(3) As it becomes generally known among builders and architects that they can sub-contract their insulation, the dealer's name is kept before them and this leads to sales of other materials on a non-applied basis.

(4) It reduces the possibility of the Insulation Contractor stealing the dealer's market on insulation.

It is not necessarily suggested that a dealer should go in the contracting business. Some dealers have done so, others prefer to have the contracts taken in the name of the applier, but the point is that many of your good con-

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tractor builder customers will want to sub-contract their insulation and you should be in a position to handle business on that basis.

There are two approaches to this problem; one consists of the sale of packaged insulation, which the customer or his contractor may install either in open attic floors or between rafters and on gable ends. This is quite practical where the customer, for one of several reasons (among which are masonry walls), does not desire side wall insulation.

The second alternative, which can become profitable to the dealer, is the insulation of side walls by the pneumatic method.

Since few dealers are equipped with the essential blowing machines, hose, scaffold, etc., and also because of the scarcity of trained personnel for this work, it is advisable to effect a co-operative arrangement with a reliable insulation installation company by which the dealer will still control the sale, schedule, overhead, and his share of the profit to which he is entitled by having created and developed the "lead" to the point of sale.

This latter arrangement can be made to result in a mutually agreeable trading basis whereby the insulating contractor can become a profitable customer to the dealer for his other building material requirements.

It will aid the dealer in effecting his goal of "one stop" merchandising by being able to offer a complete insulation service.

Insulation is not only recognized but has been given preferential attention by F.H.A. and other financing agencies; and, by making a "one stop" purchase, the customer is enabled to pay for the insulation for his home over the period of years of his mortgage with the assurance that if he buys the right product, in the correct thicknesses, he will reap dividends because insulation, properly installed, actually pays for itself.

TYPES OF INSULATING MATERIALS

Basic materials that have proved themselves suitable for manufacture into insulating products are generally classified as follows:

A. MINERAL
   1. Rock Wool
   2. Glass Wool
   3. Slag Wool
   4. Vermiculite
   5. Expanded Mica
   6. Aluminum, Metal Foil

B. VEGETABLE
   1. Cellulose Fibre
   2. Cotton
   3. Creped Paper
   4. Shredded Paper
   5. Wood Fibres

The numerous forms into which these materials are processed will solve every conceivable insulation problem. All phases of the utilization and application of these many finished products have been exhaustively studied by the individual manufacturer. The general public can accept these findings with confidence that they will perform as specified in all types of construction and under all climatic conditions.

An index of the various types of insulating products follows:

A. Blanket Insulations
   1. Wood or mineral fibre, lined or wrapped on one or both sides with vapor barrier on warm side.
   2. Multiple layers of asphalt treated wood fibres stitched to creped cover, and compressed for shipment.
   3. Insulating papers, with vapor barrier on warm side.

B. Batt Insulations
   1. Plain (no vapor barrier).
   2. Vapor barrier on warm side, plain on other.

C. Loose Fill Insulation
   A wide variety of loose materials, fibrous and granular, and usually made of:
   1. Mineral, rock, slag or glass wool.
   2. Vegetable or mineral granules.

THE ABOVE PHOTO shows blanket insulation being applied to the side walls of new housing. It is being fastened with an automatic stapling hammer.

D. Structural Insulating Board
   1. Building Board
   2. Sheathing
   3. Lath
   4. Tileboard (panels)
   5. Plank
   6. Roof Insulation Board

E. Slab (or Block) Insulations
   1. Corkboard
   2. Wood fiber and cement
   3. Mineral wool with binder
   4. Insulating board slabs
   5. Asphalt-Vermiculite slabs
   6. Hard rubber
   7. Cellular Glass

F. Reflective Insulations
   1. Aluminum foil
      a. Plain (no paper backing)
      b. Paper backed foil
      c. Accordion pattern
   2. Aluminum foil-surfaced plaster board
   3. Dull sheet steel

G. Miscellaneous
   1. Confetti-like material sprayed on with adhesive.
   2. Combinations of aluminum foil with other types of insulation such as blankets and structural insulating board.
   3. Insulating board core surfaced on one or both sides with asbestos-cement board, metal or other material.
   4. Multiple layers of corrugated paper.
   5. Cellular mass made from liquid resin.

BLANKET TYPE INSULATION

Blanket Insulations are flexible insulations over 48" in length, manufactured to controlled thicknesses. Blankets are folded into cartons or rolled into rolls. Strips is another name for blankets. They are made from various processed mineral wool and vegetable fibers and animal hair, including mineral wool (rock, glass, and slag), wood fiber, cotton and cattle hair. The fibers in most cases are either naturally fire, moisture and vermin-resistant or are treated to render them so.

Because of the variation in the different products, the manufacturing processes vary considerably. Blanket insulation, however, may be considered as being of felted or wool-like mattings which are of three general types: (1) those having the fibers completely encased on all sides with kraft or other paper, one side of which is a vapor barrier, and (2) those that have a vapor barrier paper on one side only and are not encased. (3) Those that have no paper covering, the interlaced fibers having sufficient strength with or without stitching, to hold the material into a coherent matting or blanket.

Materials in the first two classifications often are provided with a nailing flange to conform to standard spacings of wood framing. Those in the second classification are usually made enough wider than the standard framing spaces to provide for edge fastening through the material itself. Blanket insulations are available in one, two, and three inch thicknesses. These thicknesses are not always specified but are called various names by com-

peting manufacturers, such as full-thick, double-thick, standard, commercial, etc.

Uses

Blanket type materials are usually installed where there are large areas requiring insulation. Blanket materials are sold in long pieces (40' to 100' depending on thickness) which can easily be installed where a minimum of cutting and fitting is required. They can be used in side walls of new buildings, in attics and roofs and can be recommended in remodeling work where an extra room is added to the home.

APPLICATION

Masonry Walls

Blanket insulation may be installed where the thickness of the furring strips prevents contact of the insulation with rain borne moisture conducted to the back side of the masonry. Wherever insulating blankets or batts are used with new masonry, an effective vapor barrier should be installed on the warm side, unless a vapor barrier is already a part of the insulation, to reduce the passage of vapor. The small amounts of vapor which penetrate the wall will pass to the outdoors through the masonry which is always vapor permeable.

In order to apply blanket insulations to masonry walls it is necessary first to install furring strips vertically and the proper distance apart, usually 16 inches on centers. The furring strips usually are either 1 x 2 or 2 x 2 inch wood strips and are attached to the masonry walls by securely anchoring them to the wall. Where the wall is of solid concrete, it is necessary to drill holes in the concrete and to attach the furring strips by means of expansion bolts. The furring strips not only serve to level off the wall and provide a means of attachment for the blanket insulation, but also separates the insulation from the masonry by an air space, thus preventing any dampness from entering the insulation. Many blanket insulations are enclosed in a waterproof material which would protect them from such dampness.

The insulation is then nailed or tacked in continuous strips to these furring strips. The ends of the insulation are fastened to sills, plates or headers in a similar manner. If an interior finish is to be installed, as is usually the case, the blanket insulation need only be tacked to hold it in place until the interior finish is applied. Blanket insulation having a nailing flange may be installed in a similar manner, the nails or tacks being driven through the flange into the furring strips. Compressible type blankets may also be run over the framing and compressed beneath the lath or interior finish. This method is often used by prefabricators or mass builders.

Frame Construction

There are two methods of applying blanket insulation to frame construction: (1) between the framing members, or (2) on the face of the inside edges of the framing members.

Between Framing Members: When applied between framing members, blanket insulation of less than the thickness of the framing members should be installed in such a manner that two air spaces are formed. The insulation is held in place by means of lath strips nailed through the insulation into the sides of the framing members. The ends are similarly fastened in place to the header or plate and sill by means of lath strips. Where nailing flanges are provided, nailing is made through them to the framing members.

Many thin insulations are attached to the face of the studs.

One type of flexible insulation is installed between studs by first securing the end with lath strips to the header, then stretching to the desired length and attaching to the sill in the same manner, after which the blanket is fastened along the sides near the studs by driving nails at intervals of approximately 18 inches through the edges of the insulation into the sheathing.

***BATT INSULATIONS** are installed similarly to blankets, and its qualities are also similar. Its selection is largely a matter of the preference of the applicator.*

Over Inside Edges of Framing Members: As previously stated, certain types of blanket insulation are provided with flanges for nailing to the framing members. The folded portion of the flange is lapped over the exposed edge or face of the framing members and tacked or stapled through the flange for temporary fastening until held permanently by the plaster base or interior finish. If the interior is not to be finished, wood strips are applied over the edge of the framing and ends should be nailed to sill, plates or headers.

BATT TYPE INSULATION

Batt insulations are similar to blankets except that they are 48 inches in length or under. The most common thickness of mineral wool batt insulation is wall-thick (3 inches) and may be completely encased in all sides with paper, one side of which is a vapor barrier, or may have a vapor barrier paper on only one side. Batts are manufactured in widths suitable for inserting between framing —usually about 15 inches wide for framing on 16 inch centers and 23 inches wide for 24 inch centers. Batts are also furnished in 1 inch and 2 inch thicknesses.

Uses: Batt and blanket type materials are interchangeable in all areas. The decision as to which type to use depends on the customer's preference.

Application: Batts are installed by inserting them between the framing members and fitting them tight against studs and sheathing. Adjoining batts are butted snugly together and the nailing flange nailed or stapled to the face or side of the framing member. Odd shaped spaces are filled by cutting batts to the proper size.

A vapor barrier is recommended where plain batts are used and is applied on the warm side of the wall as soon as the batts are in place.

STRUCTURAL INSULATING BOARD

(Because its primary use is as a board product and because its insulating properties are plus values to its use as a board, structural insulating board is discussed in the Board Products section.)

COEFFICIENT OF HEAT TRANSMISSION

of a Typical Frame Wall With Wood Clapboard or Shingles Based on 1 Sq. Ft. Per Hour—Per 1 Sq. Ft. of Exterior Wall

Exterior Wall	"U" Value in Btu	Reduction in Btu	% Reduction in Heat Loss
Uninsulated wall	.25		
Insulated with 1" Blanket or Batt	.13	.12	48.0
Insulated with 2" Blanket or Batt	.094	.156	62.4
Insulated with 3" Blanket or Batt	.076	.174	69.6
Insulated with 3⅝" Blanket or Batt	.071	.179	71.6

Distributors of KIMSUL INSULATION

A PRODUCT OF Kimberly Clark RESEARCH

ALABAMA
Birmingham Sash & Door Co.....*Birmingham*

ARIZONA
Southwestern Sash & Door Co.....*Phoenix*
Tucson

CALIFORNIA
Pacific Coast Aggregates....*Fresno, Oakland*
Sacramento, San Francisco
San Jose, Stockton
Blue Diamond Corp.....*Los Angeles*
Zellerbach Paper Co.....*Los Angeles*
Redding, Sacramento
Gunn Carle & Co.....*San Francisco*

COLORADO
Lumber Dealers Inc.....*Denver*

CONNECTICUT
New Haven Reserve Supply.....*New Haven*
Igoe Brothers, Inc.....*Stamford*
Goldberg Building Supply Corp.....*Unionville*

DISTRICT OF COLUMBIA
Kern Distributing Co. Inc.....*Washington*

FLORIDA
Atlanta Oak Flooring Co.....*Jacksonville*
Huttig Sash & Door Co.....*Jacksonville*
Miami
I. W. Phillips Co.....*Tampa*

GEORGIA
Atlanta Oak Flooring Co.....*Atlanta*

IDAHO
Reilly Atkinson & Co., Inc.....*Boise*

ILLINOIS
National Plywoods, Inc.....*Chicago*
Onsrud Distributing Co.....*Evanston*
Insulation Dealers & Supply Co.....*Peoria*
Hardware Products Co.....*Sterling*

INDIANA
Indiana Wholesalers, Inc.....*Evansville*
Inland Distributing Corp.....*Ft. Wayne*
Indianapolis, South Bend

IOWA
Williams & Hunting Co.....*Cedar Rapids*
Lumbermens Associated Buyers Co.....
.....*Des Moines*
Lumbermens Associated Buyers Co.....
.....*Fort Dodge*
The Fonda F. Rock Co.....*Sioux City*
Herrick Refrigerator Co.....*Waterloo*

KANSAS
The Russ Building Material Co.....*Wichita*

KENTUCKY
Huttig Sash & Door Co.....*Louisville*
Paducah Sash & Door Co.....*Paducah*

LOUISIANA
Woodward-Wight & Co., Ltd...*New Orleans*

MAINE
Rice & Miller Co.....*Bangor*
The Emery-Waterhouse Co.....*Portland*

MARYLAND
Radford & Sanders Inc.....*Baltimore*
Delmarva Sash & Door Co.....*Barclay*

MASSACHUSETTS
Building Materials Wholesalers, Inc.....
.....*Charlestown*
Allen Slade & Company.....*Fall River*
Warren F. Hoye, Inc.....*Springfield*
Read & Company, Inc.....*Worcester*

MICHIGAN
Cloverland Supply Co.....*Crystal Falls*
Quality Materials Co.....*Detroit*

MINNESOTA
Marshall-Wells Co. .....*Duluth*
The B. F. Nelson Mfg. Co.....*Minneapolis*

MISSOURI
Rust Sash & Door Co.....*Kansas City*
Huttig Sash & Door Co.....*St. Louis*

MONTANA
Lumber Dealers, Inc.....*Billings*
Lumber Yard Supply Co.....*Great Falls*

NEBRASKA
The Gellatly Co.....*Hastings*

NEVADA
Zellerbach Paper Co.....*Reno*

NEW HAMPSHIRE
Johnson Lumber Co., Inc.....*Manchester*
Woodsville

NEW JERSEY
Igoe Brothers, Inc.....*Asbury Park*
Hawthorne, Newark
Interstate Roofing & Supply Co.....*Trenton*

NEW MEXICO
Southwestern Sash & Door Co...*Albuquerque*

NEW YORK
Igoe Brothers, Inc.....*Brooklyn*
Hollis, L. I.
Enos & Sanderson Co.....*Buffalo*
Saltpoint Supply Corp.....*Felts Mills*
Syracuse
Simpson Box & Lumber Co., Inc....*Rochester*
Goldberg Wholesale Supply Corp...*Tarrytown*
Goldberg Building Materials Corp.....*Troy*
John P. Reed Co.....*Utica*

NORTH CAROLINA
Huttig Sash & Door Co.....*Charlotte*
Atlanta Oak Flooring Co.....*Charlotte*

NORTH DAKOTA
Dakota Sash & Door Co., Inc.....*Fargo*
Lumbermens Associated Buyers Co....*Fargo*

OHIO
Acme Sash & Door Co.....*Cincinnati*
Quality Materials Co.....*Cleveland*
Huttig Sash & Door Co.....*Columbus*
Dayton Sash & Door Co.....*Dayton*

OKLAHOMA
Bolender Material Co.....*Oklahoma City*

OREGON
McCraken-Ripley Co. .....*Portland*

PENNSYLVANIA
Radford & Sanders, Inc.....*Harrisburg*
Delmarva Sash & Door Co.....*Lancaster*
Philadelphia
Quality Materials Co.....*Pittsburgh*
The N. B. Epstein Co.....*Scranton*

RHODE ISLAND
Read & Company, Inc.....*Providence*

SOUTH DAKOTA
The Dakota Sash & Door Co.....*Aberdeen*
The Knecht Lumber Co.....*Rapid City*

TENNESSEE
Huttig Sash & Door Co.....*Knoxville*
Memphis Sash & Door Co.....*Memphis*

TEXAS
Huttig Sash & Door Co. of Texas....*Dallas*
Southwestern Sash & Door Co.....*El Paso*
Geo. C. Vaughan & Sons.....*Houston*
Nederland, San Antonio
Galbraith Steel & Supply Co.....*Lubbock*

UTAH
Knudsen Builders Supply Co...*Salt Lake City*
Morrison-Merrill & Co.....*Salt Lake City*

VIRGINIA
Addington-Beaman Lumber Co., Inc...*Norfolk*
Sash Door & Glass Corp.....*Richmond*
Huttig Sash & Door Co., Inc.....*Roanoke*

WASHINGTON
Pioneer Sand & Gravel Co.....*Seattle*
Spokane Paper & Stationery Co.....*Spokane*
Geo. Scofield Co., Inc.....*Tacoma*

WISCONSIN
Lumber Dealers Supply, Inc.....*Green Bay*
Capital City Culvert Co.....*Madison*
The Marshfield Milling Co.....*Marshfield*
Frankfurth Hardware Co.....*Milwaukee*
Wisconsin's Transfer Yard.....*Oshkosh*

CANADA
Edmonton Paint & Glass Co., Ltd.....
.....*Edmonton, Alberta*
Sidney Roofing & Paint Co., Ltd.....
.....*Vancouver, B. C.*
Lumber Dealer's Supply Ltd.....
.....*Winnipeg, Manitoba*
The Kinday Co.....*Windsor, Ontario*

*TRADEMARK

KIMBERLY CLARK CORPORATION - NEENAH, WISCONSIN

122 East 42nd Street, NEW YORK 17
155 Sansome Street, SAN FRANCISCO 4
8 South Michigan Avenue, CHICAGO 3
22 Marietta Street, N. W., ATLANTA 3, GA.

Dealer tells how KIMSUL* made sales go up, costs go down!

KNECHT LUMBER COMPANY

RAPID CITY, SO. DAK.
IN THE BLACK HILLS

January 20, 1949

KIMSUL DIVISION
Kimberly-Clark Corporation
Neenah, Wisconsin

Gentlemen:

Since 1942, when we began selling KIMSUL, we have been steadily increasing our sales of this product. We feel that a great measure of this is due to the splendid job you have done in backing up the lumber dealer thru effective national advertising programs, outstanding point-of-sale displays, educational literature and field promotion.

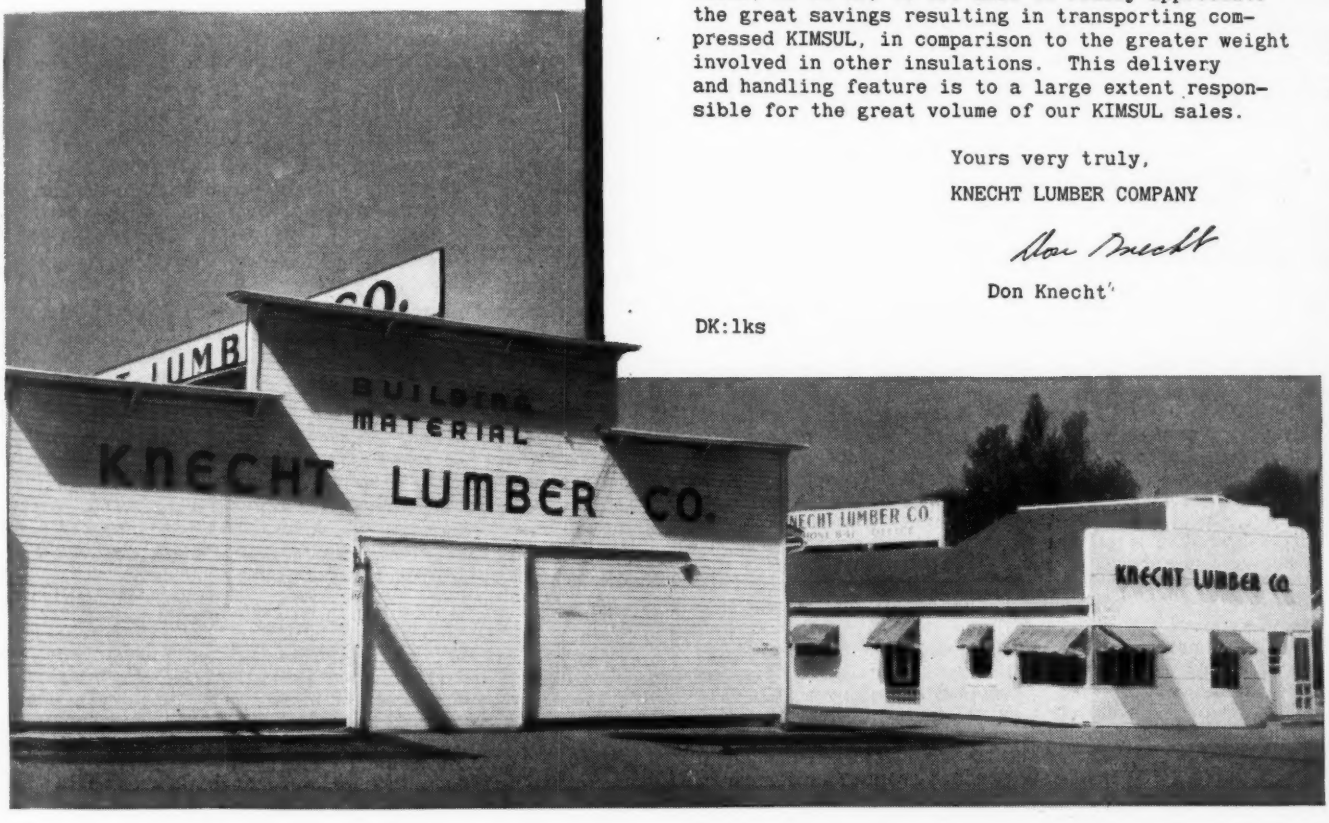
Covering a sales area of 175 miles in all directions, as we do, we are able to really appreciate the great savings resulting in transporting compressed KIMSUL, in comparison to the greater weight involved in other insulations. This delivery and handling feature is to a large extent responsible for the great volume of our KIMSUL sales.

Yours very truly,
KNECHT LUMBER COMPANY

Don Knecht

Don Knecht

DK:lks



Increased sales—decreased costs! From coast to coast, dealers consistently list these as the two important advantages of handling KIMSUL insulation.

An extensive program of advertising and merchandising is a vital factor in the KIMSUL sales effort, for this program is the largest in the industry—designed especially to help dealers keep their stocks of KIMSUL moving rapidly. Then too, more and more buyers are becoming quality-minded and find in the many exclusive features of KIMSUL the most efficient, yet economical solution to their insulating problems.

And today—more and more dealers are learning how much KIMSUL saves them on overhead. For Kimsul comes in easy-to-handle rolls—compressed, to save 80% on storage space—light, to save 80% on handling costs!

If you are not yet a KIMSUL dealer, and want to handle this fast moving, nationally advertised insulation, write for details to the KIMSUL distributor in your area, or directly to Kimberly-Clark Corporation, Neenah, Wisconsin. Complete sales and promotion information is also available.

America's Finest New Homes Are Insulated With KIMSUL!

KIMSUL INSULATION
A product of Kimberly Clark Research

*T. M. REG. U. S. AND CAN. PAT. OFF.

THE ABOVE is a typical example of mineral granule loose fill insulation. This type is usually installed in the walls of existing structures and between ceiling joists.

LOOSE FILL INSULATION

Mineral Wool

Fill insulations are bulk materials which are usually sold in bags. Various types may be packed, poured or blown into open framing members.

Mineral wool includes three types of incombustible insulation called rock wool, slag wool, or glass wool, depending upon the nature of the material from which it is manufactured. Rock wool is made from rock; slag wool is made from slag. In both cases, they are melted in a high cupola with a hole at the bottom to let a molten stream of the material out. This passes through a blast of steam that blows the material into long hair-like "wool" threads, which, on cooling in the air, fall to the floor of a collecting chamber. From this first formation they may be fabricated into nodules or into batts or blankets. Glass wool is produced by melting glass sand and passing the molten mass through tiny orifices where, upon cooling, it is fabricated in a manner similar to that of other mineral wools.

Mineral wool-filled bearing partitions have been accorded a one-hour fire rating when faced with metal lath and plaster.

In some cases loose mineral wool is poured from bags into framing members where the space is accessible and it is practical to do so. More often it is blown into open and concealed spaces, such as unfloored ceilings or walls, by a blowing machine such as those already acquired by many lumber dealers. This machine is like a vacuum cleaner in reverse, and will produce a more uniform and more compact job than can be obtained by hand methods. The machine takes the material through a hose into spaces prepared for its reception. These spaces may be entirely concealed, such as the stud spaces in walls of existing houses where plaster is also already in place.

Wood Fiber Wool

There are several fill insulations made from wood fiber into a light-weight fleecy insulating material. These are generally treated to render them vermin repellent and moisture resistant. Some are also fire resistant. This type of insulating material is also fabricated into blanket insulations.

Vermiculite

Vermiculite is an inert, light-weight, granular insulating material manufactured by exploding an aluminum magnesium silicate mineral, which is a form of mica. This mineral is made up of approximately one million separate layers per inch. Between each layer is a minute amount of water. When flakes of the mineral are suddenly exposed to high temperatures in a specially designed furnace, the water between the layers changes to steam, causing it to explode into cellular granules or vermiculite insulation about fifteen times their original size. The final product is graded into different sizes for various uses, including building insulation, light-weight concrete and plaster aggreate.

Uses

Fill type insulations are normally used for insulating existing buildings by a blowing-in process. Some types are poured in open attics between ceiling joists. Some materials of this type may also be installed by hand packing in irregular spaces. Typical installations are floored or open attics, wood, stucco and brick veneer walls.

Application of Fill Insulation

The application of granulated type fill insulations, such as expanded vermiculite (mica pellets), loose and granulated rock wool is comparatively simple. The material is poured from bags in which it is sold, or hand-packed (in the case of loose fill), or blown from a blowing machine between the framing members. Vermiculite is generally used between ceiling joists only.

Insulating Walls

The pneumatic method of installation is the most common because it produces a pressure when properly adjusted so that all the spaces are packed full. This method can be used during or after the completion of the construction. Loose or nodulated rock wool or similar fibrous materials can be hand-packed as the construction proceeds, but only expert and careful mechanics can be depended upon to get uniform density and complete filling.

If a vapor barrier is to be provided, it should be installed on the warm side of the wall that is, on the inside of the studs, and nailed thereto. The barrier should be installed as the work progresses, starting at the bottom of the wall, and applying first the vapor barrier and then the plaster base or interior finish over it to a height of not to exceed 48 inches. The fill insulation may then be poured from the bags, or hand packed in the case of loose rock wool, to this height, and the procedure repeated until the stud spaces are filled to the top.

Insulating Ceilings

Insulating Ceilings with Fill Insulation. Loose fill insulations of the granular or fibrous types may also be poured from bags into the spaces between the ceiling joists to the desired depth, usually four inches. The fill insulation may be poured in place as soon as the plaster base or interior finish is installed, except where open lath are used, in which case it is necessary to wait until the plaster has been applied and has thoroughly dried.

If a vapor barrier is to be provided it should be installed on the under side of the ceiling joists before the interior finish is applied. The fill insulation will, when installed in accordance with the foregoing procedure, rest directly on the upper surface of the barrier.

Pneumatic Method of Application. The problem of insulating existing buildings with fill insulation is more intricate, due to the lack of access to the hollow spaces in walls and roofs. This is accomplished successfully by blowing nodulated or granulated mineral wool between these spaces. The wool is blown through a hose under pneumatic pressure, the installation being done by applicators equipped with the special apparatus for doing this work. Many lumber dealers own their own blowing machines and do a large and profitable business in this field. Others make mutually satisfactory financial arrangements with specialists and make no investment in such equipment.

The use of a vapor barrier in existing structures is not mandatory, but is a good insurance against housekeeping methods that result in high humidities, such as allowing the drying of laundry indoors, over-use of humidifying apparatus, or permitting damp basements. It is advisable to provide ventilation over ceiling insulation in all cases where high interior humidities would otherwise develop. An efficient vapor barrier may be provided by applying two coats of lead and oil or aluminum paint to the interior plaster surface, but ventilation and control of humidity normally are sufficient. If aluminum paint is used to provide a vapor barrier it can be covered with any type of decoration.

INSULATING AGGREGATES

The development of light weight aggregates has captured the interest of the leading architects and engineers all over the country.

Made from expanded vermiculite and cement or plaster, it is proving to be an insulating as well as a construction material.

When used for floor and roof decks, it serves the construction purpose effectively and insulates as well.

is FIBERGLAS*

. . . . . *because* DEALERS LIKE IT

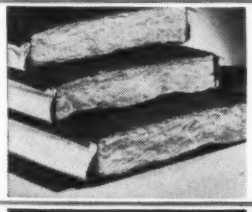
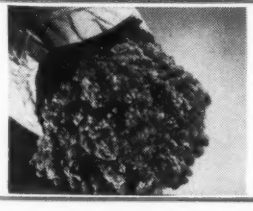
Dealers like Fiberglas Insulation because it is easy to sell, and because, in a single well-known line, they get all the different types and sizes of insulation they need to stock.

What's more, Fiberglas gives them the only mineral wool roll blanket on the market. Continuous vapor barrier, too. Another plus is the compression package which saves 40% of storage space as compared to cartons.

So the dealer gets a premium quality product at a regular price, a full line in one brand, plus exclusive features. This universally accepted insulation is backed up by extensive national and trade advertising. No wonder he likes it!

Distribution through four industry-leading firms whose names appear below, assures good service on your Fiberglas Building Insulation requirements. Owens-Corning Fiberglas Corporation, Dept. 2020, Toledo 1, Ohio.

In Canada: Fiberglas Canada Ltd., Toronto, Ontario.

		Thickness	Width	Length	No. Pcs. Per Pkg.	Coverage per Bag in Sq. Ft.
	ROLL BLANKETS Asphalted, vapor-resistant paper on one side. Perforated, vapor-permeable paper on other side.	Thick	15″	32′0″	1	40
		Medium	15″	48′0″	1	60
		Inch	15″	80′0″	1	100
		Thick	23″	20′11″	1	40
		Medium	23″	31′4″	1	60
		Inch	23″	47′0″	1	90
	**BATT BLANKETS** Same type of construction as the Roll Blanket.	Thick	15″	48″	8	40
		Medium	15″	48″	12	60
		Thick	15″	24″	16	40
		Medium	15″	24″	24	60
	UTILITY BATTS Made of Fiberglas PF Insulation.	Full Thick	15″	10¾″	27	30
	**POURING WOOL** For pouring or hand packing.	Packed in paper bags—approximately 40 lbs. per bag.				20—24

DISTRIBUTED BY 4 INDUSTRY LEADERS

ARMSTRONG CORK COMPANY
Lancaster, Pa.

CERTAIN-TEED PRODUCTS CORP.
Ardmore, Pa.

THE FLINTKOTE COMPANY
New York, N.Y.

KELLEY ISLAND LIME & TRANSPORT CO.
Cleveland, Ohio

Save scarce fuel . . . Insure comfort . . . Insulate with FIBERGLAS

ALUMINUM foil-covered cotton insulation. Foil covering on the back of the cotton is a waterproof vapor barrier, while the top surface is perforated for a breather cover. Aluminum adds reflective qualities to the low "k" value of .24 of cotton insulation.

REFLECTIVE INSULATION

Reflective insulation has been in use for many years on both residences and commercial buildings. This type of insulation usually consists of aluminum-coated paper, foil, or polished sheet steel, possessing a high degree of "reflectivity." These products insulate on an entirely different principle than thick, fibrous materials. Their effectiveness is based upon the scientific fact that aluminum or polished metallic surfaces actually reflect the heat radiation which they intercept, thus keeping heat in the home during winter months and out during hot summer weather. The performance of these reflective insulations can be better understood when compared to the well known thermos bottle or electric heater, both of which exemplify the process of heat reflection.

Acts as Insulator and Vapor Barrier

Reflective insulations are highly resistant to the passage of water vapor, hence they perform as a combination insulation and moisture-vapor barrier in guarding against condensation, with its resultant damage to paint, plaster and structure materials. The strength of the product is important from an application standpoint and reflective insulations which are reinforced with sisal or jute fibres may be applied with less risk of damage and tearing. (Intact application is an important feature of good construction, as a break or tear in the material nullifies its function as a protective barrier against vapor.)

Aluminum coated insulations or foils are considered permanent in their efficiency, and thin accumulations of dust have no appreciable effect on the insulating properties of the sheets. This is explained by the fact that heat (infra red rays) can penetrate dust, whereas light, of course, cannot. Other advantages claimed for reflective-type insulations are the facts that no moisture is absorbed by the material to reduce its efficiency, nor does it store up latent heat within the material itself, hence it qualifies as an excellent "summer comfort" insulation. Reflective insulations fulfill another important requirement in that they cannot settle, leaving uninsulated gaps at the ceiling level which permit heat loss and cause unsightly dust precipitation or lath marks.

Application

The application of reflective insulation is similar to that of flexible blankets or bats, i.e. the insulation is applied between the framing members of a residence. Reflective insulations, however, should be applied either facing, or preferably dividing or "bowed-in" to an air space between the studs or joists, as this creates two so-called dead air spaces which minimize heat transfer by convection, similar to the idea of adding storm sash to the windows.

Reflective insulation should not be sandwiched between sheathing and siding, or imbedded in concrete, as in such positions there would be no opportunity for the material to reflect heat radiation. Reflective insulation has given excellent service for many varied applications; and its efficiency and low cost are factors making this type of insulation an increasingly popular material with the residential builder. The manufacturers of these products furnish full particulars on roll sizes and technical data on request.

WHY INSULATION IS NECESSARY

All building materials such as wood, masonry, etc., and even wide air spaces permit the passage of heat from the interior to the exterior in winter or from the exterior to the interior in summer. This applies even to insulation. Insulation does not completely stop the passage of heat but it is manufactured for the express purpose of retarding the greatest possible amount of heat in area insulated.

Just how does insulation work? First of all, to understand it let us examine the personal heating system. Your body has its own furnace and unless you are ill, stays at one temperature, normally 98.6° summer and winter. The amount of heat you generate is, in fact, more than you can stand, and you are constantly throwing off heat. If you did not, you would suffer from fever, but when this heat escapes too fast you feel cold and have goose flesh as your body works hard to make up for its loss.

Insulation Related to Human Comfort

You can warm the furnishings, the objects you touch in your home, by heating the air, as your furnace does. You can close windows to avoid drafts. But even if your room is heated to a livable 70°, you cannot be comfortable when cold walls, ceiling and floors are drawing too much heat from your body by radiation. In a sense, then, your body-heat is heating your own walls. Heated air warms too but without insulation it cannot keep up with the loss to the outside. Here then is insulation's simple job—to make walls, ceilings and floors resistant to the escape of heat from indoors. Heat stays within such walls to create a surface temperature near that of the indoor air. In summer, outdoor heat is held within the wall and results in a lower interior surface temperature than would be the case without insulation.

By reducing heat transfer through walls, ceilings and floors in winter, insulation raises the inside wall and ceiling surface temperatures in a heated house to such an extent that the falling currents of air (drafts) resulting from warm air coming in contact with chilled surfaces are noticeably diminished. Thus, all areas of living quarters become comfortable for the occupants and the danger of colds brought on by drafty conditions is reduced. The same barrier will bring about indoor summer comfort.

How Heat Is Transferred

Heat is transferred in three ways—by conduction, convection, and radiation. Insulation affects each means of transfer.

Conduction is the flow of heat through a solid such as the heat from boiling water passing along the handle of a silver spoon. So, in lesser degree, the heat generated inside or outside a room flows through walls, ceilings, and floors. When a barrier of insulation is interposed, the flow diminishes.

Convection is a transfer of heat by moving currents of air. As such currents move past a warm surface they pick up the heat and carry it with them. Although hollow spaces in walls may be part sealed, a difference in temperatures between top and bottom of the sealed areas creates currents of air, which always carry heat from the warmer side to the colder.

Radiation is the process by which the sun's energy is carried to the earth. Any warmer surface transfers heat by radiation to any cooler neighboring surface. This radiant transfer even takes place within a room and between the walls of a room, thus the warmer walls of a house radiate heat to the colder ones.

The passage of heat through building materials is chiefly by conduction, the heat always going from a warmer area to the colder side. There are several factors that determine this passage of heat. They are:

(1) Temperature difference between the two surfaces—the greater the difference in temperature the more heat per unit of time that will be transferred. If you have an inside temperature of 70° and an outside temperature of 0°, more heat units per hour per square foot will go through the wall than if the outside temperature were 30°.

(2) Thickness—less heat is transferred through thicker materials (Conductivities being equal).

(3) Area—the larger the wall or ceiling area, the greater the amount of heat transferred.

(4) Time—the amount of heat transferred is proportional to the number of hours during which the heat flow takes place.

LEVITT AND SONS, INC
MANHASSET, N.Y.

WILLIAM J. LEVITT
PRESIDENT

From the desk of
LARRY GILMAN

Thanks a lot, Bill—
We couldn't have said
it better ourselves!
L.G.

Gentlemen:

I think you should know why we selected Cellulite for the insulation of all the houses that we intend to build in 1949.

First, from past experience, we have found that it does as good or better a job than any insulation we have ever used before.

Second, our mechanics like it because it's easy and pleasant to work with and causes no damage to their hands.

Third, our supply house and transportation problems are minimized because it is easily compressed into small space for storing and transporting and immediately fluffs back to its original thickness when workmen are ready to install it.

Fourth, it is so light and easy to install that tangible savings result from its use.

There is a fifth reason — and equally important. Our business relationship has been so pleasant that it contributes immeasurably to the smoothness of a rather complicated production line. Good luck to you, and the best of everything in 1949.

Very truly yours,

W. J. Levitt

The Gilman Brothers Co.
Gilman, Connecticut

—and have you heard about Cellulite's new acoustical blankets in 64" and 72" widths?

MAIL THIS COUPON TODAY!

THE GILMAN BROTHERS COMPANY, Gilman 6, Connecticut

We're interested in receiving information about:
☐ Cellulite Cotton Insulation
☐ Cellulite Acoustical Blankets for sound deadening

Name.....
Firm.....
Street Address.....
City.....Zone.....State.....

(5) Rate—rate of heat transfer will affect the amount of heat going through a wall. This will depend on the physical characteristics of the material and how fast a material conducts the passage of heat, and the temperature difference between the high or low point.

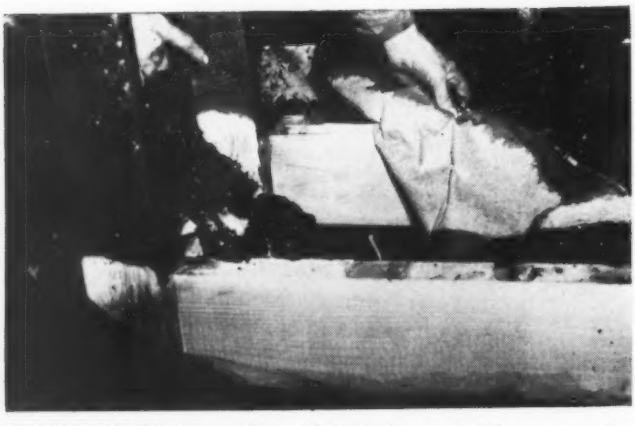
BENEFITS OF INSULATION

For the Home Owner

In addition to its effect on personal comfort, insulation benefits its user in a number of other ways.

Saves Fuel Costs and Conserves Heating Equipment: While weatherstripping and storm doors and windows (see Windows, Doors, Millwork Section) are widely recognized as important means for conserving heat, the use of wall, floor, ceiling and roof insulation will result in a maximum saving of fuel because greater heat loss areas are involved. Proper use of insulation can cut home fuel bills 40 to 50%, according to the results of actual technical studies. In addition, insulation will save the owner money, in the case of new houses and replacement units, by allowing smaller heating units to be used satisfactorily. In the case of an existing home, it will lessen the load on old heating equipment, making it last longer.

Fire Protection: Incombustible heat-insulating barriers in roofs and walls make even frame buildings slow-burning, and this advantage has been recognized in the fire-prevention codes of many cities. The George Washington home at Mount Vernon, was insulated upon the recommendation of the National Bureau of Standards, because mineral wool placed between rafters and in the walls around dormer windows would inhibit the spread of fire. Tests at the National Bureau of Standards showed that a wood-lath partition filled with mineral wool would stop the passage of fire for 1 hour, at the end of which time the studs were still able to carry the load. Photographs of burned houses have illustrated the fact that flames, originating in the attic space from lightning, defective flues, or crossed wiring, have been checked at the line where the mineral wool lay between the joists of the second floor ceiling until the arrival of the fire department saved the balance of the house.



THE FIRE RETARDANT qualities of insulating materials are very important. The above shows how insulation stopped fire advance before damage occurred to joists.

Reduced Redecorating Expense: The decrease in drafts within the rooms of an insulated house reduces the play of particles of dirt and dust upon walls and ceilings and the more even temperatures of room-side surfaces, resulting from the limitation of heat escape (thermal transfer), make unlikely the appearance of disfiguring lath and beam marks. The life-expectancy of all types of interior decoration is thus increased, and redecoration becomes necessary less frequently.

For the Farmer

There are several economic reasons for using insulation in farm buildings. Some of the reasons for insulation are

INSULATION of farm buildings affords many advantages. Here structural board insulation is used to line inside walls of poultry building.

(1) increase in production, (2) lessens mortality, (3) lessens food spoilage, (4) increases life of building and (5) saves fuel. In addition to the primary economic advantages involved, insulation of farm buildings also provides greater comfort for the animals as well as for the caretakers.

Increase in Production: The heat needed for dwellings is obtained artificially by the combustion of wood, coal, oil or gas. The amount of fuel burned is varied to meet the demand. Thus it is possible to maintain a fairly uniform temperature within the building. The heat of warming animal shelters must come either from the bodies of the animals or from burning fuel. Nearly always the heat is provided by the animals,—hence it is limited to the heat production of their bodies. The inside temperature thus fluctuates to a considerable extent with variations in the outside temperature.

Animals or poultry will consume approximately the same amount of feed regardless of the temperature of their shelters. However, if a building is extremely cold, more of the food will be used for keeping up body temperatures and less for production. This will mean for example a reduction in the output of milk or eggs. Therefore warm inside winter temperatures result in greater production.

In a bulletin published by the United States Department of Agriculture, attention is called to the fact that experience has shown it pays to keep cows comfortable. Experiments made at the Institute of Animal Nutrition at Pennsylvania shows that under the usual conditions of intensive cattle feeding the cost of maintenance increases 1.4 percent for each degree the temperature falls below the point at which the animal begins to feel cold.

Maximum production depends upon preventing sudden changes in temperatures. Rapid temperature variations are more dangerous than steady cold. Even in mild climates for example, sudden temperature fluctuations in poultry houses often cause the output of eggs to fall off. The inside temperature of an insulated building is not subject to quick changes because the insulation holds the heat inside and the building cools off gradually.

Lessens Mortality: According to farm experts the health of young animals such as chicks, calves and pigs is easily undermined by cold and drafty buildings. Insulation helps provide the needed warmth. Insulation also reduces drafts in two ways—first, by providing tighter construction, thus reducing air leakage, and second, by increasing surface temperatures.

Cold walls and ceilings create drafts because air cooled by these surfaces drops to the floor, thus starting a circulation of the air. According to many farm authorities, by reducing to a minimum these serious causes of illness, insulation enables the farmer to keep his stock healthier and to raise more animals to a marketable or productive age.

Lessens Food Spoilage: Temperature and humidity variations have a direct effect on the quality of fruits and vegetables held in storage. Freezing ruins many crops. High humidities are desirable in others in order to pre-

SO . . .

WE'RE BRINGING THE NATION TO YOUR DOORS!

Here's the way we are "telling the world" that YOU—the lumber dealer—are an insulation expert—that your knowledge and experience are trustworthy guides to insulation satisfaction. In the "Big Four" home magazines—Better Homes & Gardens, American Home, House & Garden and House Beautiful—powerful advertisements such as this will sell *your* services, *your* advice. To reach the huge small-town and rural markets, similar messages will appear in Successful Farming, Poultry Tribune and Household Magazine.

The new Balsam-Wool accelerated advertising and merchandising program is complete—using national magazines—sales literature—counter displays—window streamers—dealer mats—publicity, etc., etc., to back you with a powerful, sales-getting program. Wood Conversion Company, Dept. 120-49, First National Bank Building, St. Paul 1, Minnesota.

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LUMBER DEALERS ONLY

LOOSE FILL insulation, in combination with cement, provides high insulating qualities for floors and roof coverings.

vent shrinkage. Wide variations in temperature generally are harmful. Insulation protects the harvested crops from freezing during cold weather and from excessive heat in summer. Insulation also helps control the humidity and the operation of the ventilating system, both of which are essential in properly maintaining a good storage building.

Increase Life of Building: Insulation by making possible good ventilation and helping to prevent condensation keeps buildings dry. Damp farm buildings deteriorate rapidly. Repeated wetting and drying warps, shrinks and rots framing members and siding. This permits drafts in the buildings which then become colder and less efficient. Therefore an insulated building will last longer.

Saves Fuel: Where fuel is used to maintain inside temperatures in farm structures, insulation reduces the amount consumed. If a building is heated by the use of wood or coal, insulation not only reduces the cost of the fuel but also reduces the amount of wood or coal that must be carried in for heating purposes. If oil, gas or electricity is used for heating purposes, insulation reduces the size of the fuel bills appreciably.

For buildings such as a farm home the saving often is a sizeable amount. Whether the saving is large or small it is over and above the other advantages obtained by insulating a building.

Greater Comfort: The foregoing paragraphs give the most important economic reasons for insulating farm buildings but the matter of comfort for both the livestock and man who takes care of it is also important even though it cannot be evaluated exactly in dollars and cents. However this increased comfort is a bonus. As a prominent farm authority has stated, "Feeding, milking and other routine operations are more efficiently accomplished in the barn of comfortable temperature than under conditions that arouse an instinctive desire on the part of the workman to slight the work in order to get it done quickly."

METHODS OF INSULATING

There are three ways of retarding the passage of heat by the use of insulating materials:

(1) **By replacing** materials having a high rate of heat conduction with materials having a low rate of heat conduction. Example: Using insulating board sheathing and lath in place of non-insulating sheathing and lath.

(2) **By adding** insulating materials to the wall to partially or completely fill the air space. Example: Any type of batt, blanket or fill insulation placed in the wall or ceiling.

(3) **By applying** a reflective insulation to one or both surfaces of the air space or adding one or more reflective membranes in the stud space. Example: Adding a layer of aluminum foil to the back of the plaster lath.

Ventilators for Insulation

Roof and wall ventilators are a recommended unit to enable the user to obtain maximum benefits from insulation. They are installed either in roofs (above the insulation level) or in gable ends, or at eaves.

By providing cross ventilation (two vents to each gable or closed section) approximately 3 sq. ft. per 1,000 sq. ft. of insulated area, they eliminate super-heated air in summer and condensation in winter months. (See Heating, Plumbing, Ventilating Section.)

Either wood or prefabricated metal louvres are used. An exacting requirement is that the inner side be covered with rust-proof insect screen cloth of not less than 16 mesh, to prevent bugs, flies, birds, and other animal life to find haven in these spaces.

WHERE TO INSULATE

New Homes

Homes with Unused Attics: The general rule to follow is to insulate the walls, ceilings and floors immediately surrounding the area to be heated in winter. If the attic is not used then the insulation should be placed in the attic floor. This is preferred to insulating the roof as less material is required, since only the used portion of the building is heated and ventilation of attic space becomes a simple problem. Exterior walls should always be insulated.

Attic Rooms: Insulate the walls and ceilings around attic rooms following the outline of the room. If there is other attic space not enclosed the attic floors of the unused portion should also be insulated.

Houses without Basements: Many of today's homes are being built without basements or with basements under only part of the building. A good many builders prefer a crawl space under the floor rather than placing floor on the ground. When a crawl space is used it is recommended that insulation be placed in the floor. Good practice also calls for ventilation of the crawl space to protect against the effects of dampness.

Rooms over Open Porches: The floors of rooms above open or unheated porches or garages should be insulated in addition to all wall and top floor ceiling areas.

Remodeling

Attic Rooms: If additional rooms are being built into the attics of existing houses the outside walls and ceilings should be insulated. Follow the outlines of the rooms in applying the insulation. This is preferable to insulating the roof line as ventilation can be placed in the uninsulated hip of the roof.

Basement Rooms: Where a basement space is to be remodeled into a room, insulation of floors and walls is recommended. In addition to savings in fuel, insulation may be used on the ceiling to reduce the passage of sound from the basement room to other parts of the house.

Additions: When rooms are added to a house or porches are enclosed to make extra room the walls and ceilings should be insulated the same as in new construction. If the area beneath this addition is not heated the floor should be insulated. When porches are made into year round rooms, proper insulation will often make the addition of a heating unit unnecessary.

ACOUSTICAL MATERIALS

All insulating materials, due to the nature of the materials used in their manufacture, have certain sound deadening qualities. For some specific applications, however, where acoustical qualities are a paramount consideration, it is desirable to install a specially engineered product.

Acoustical materials are made of a variety of materials, most of which have already been described in the coverage of insulating products. Cork, wood and mineral fibre, are perhaps the most commonly used.

In most instances sufficient sound deadening is achieved by covering the ceiling. The majority of acoustical materials on the market, therefore, are designed to provide a decorative finish and bright light reflection to the area in addition to its functional duty. They are usually supplied in squares; 6" x 12", 12" x 12", 12" x 24" being common sizes. Thicknesses vary from ½" to 2½".

These materials are secured to the ceiling by nailing or cementing. Many are manufactured with special flanges and other interlocking devices to better integrate the installation.

An interesting development in the field of acoustical

Lo-"K"

Out-Insulates All Others

BY 4% TO 36%

Cotton is *Best* . . . by Laboratory Test

Material	Description	Wt. per cu. ft.	Insulating Value	
			"K" factor*	Authority
Cotton	Cotton fibers highly treated	.85	.242	J. C. Peebles
Rock Wool	Fibrous material made from rock	10.00	.268	Bureau of Standards
Mineral Wool	Fibrous material made from slag	10.50	.310	Bureau of Standards
Glass Wool	Fibrous material made from glass slag	1.50	.270	Bureau of Standards
Balsam Wool	Chemically treated wood fiber	2.20	.270	Bureau of Standards
Cabots Quilt	Eel grass between Kraft paper	3.40	.250	Bureau of Standards
Celotex	Rigid insulation made from sugar cane fiber	13.50	.330	J. C. Peebles
Insulite	Fibers from northern woods	15.90	.330	J. C. Peebles

Compare!

Official tests by recognized laboratories showing Lo-"K" leadership in "K" factor efficiency and lighter weight.

Lo-"K", the most modern of all insulating materials on the market, provides exactly what its name suggests—low thermal conductivity of "K" value, the most important single element required in good insulation. This factor alone is convincing proof of Lo-"K"s superiority. Lo-"K" is also the lightest weight type of insulation on the market thereby minimizing costs and labor.

Lo-"K" comes in convenient blanket-type rolls (full 15 inch width and ample lengths) to meet all standard construction. The backing in all types has a 1¼ inch flange for easy stapling. Get ALL the facts about this better insulation either from your nearest distributor listed below or write direct.

LOOK AT THESE Lo-"K" Extras

Saves up to 40 per cent in installation costs because of its lighter weight (only .875 lb. per cubic foot).

Easier and faster to install.

Meets rigid Government Flameproofing Tests (Resists blowtorch heat of 1800° F.).

Stays permanently in place because it is lighter. Never sags or settles. Provides longer life.

Resists moisture. Asphalt-coated Kraft paper staples firmly in place to form a vapor barrier.

Resists vermin, mildew and rot.

Non-irritating to the skin.

Insulation Division

LOCKPORT COTTON BATTING CO.

Est. 1870 Lockport, N. Y.

for Better Insulation Value and Service

THE RADFORD CO.
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Sioux Falls, South Dakota

CONSTRUCTION MATERIALS CO.
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CORPUS CHRISTI SASH & DOOR CO.
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GEO. C. VAUGHAN & SONS, INC.
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HUTTIG SASH & DOOR CO.
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EXCHANGE LUMBER & MFG. CO.
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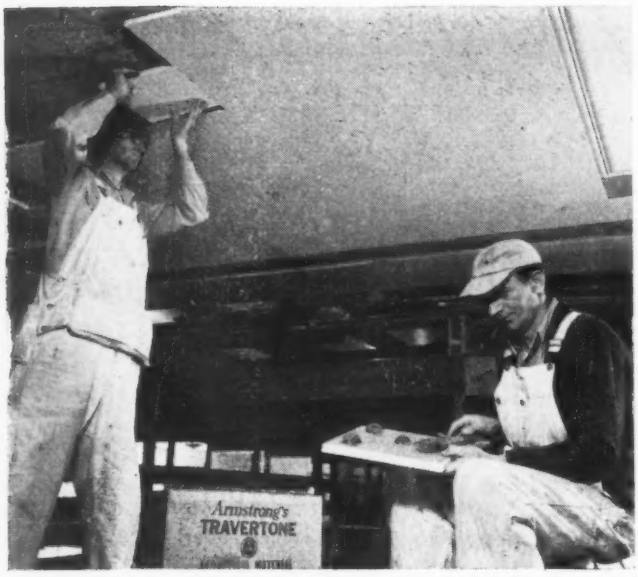
Yakima, Washington
WISCONSIN WHOLESALERS, INC.
Green Bay, Wisconsin
SHADBOLT & BOYD CO.
Milwaukee, Wisconsin
THE RADFORD COMPANY
Oshkosh, Wisconsin



***INSTALLING** one of the new acoustical materials. The fissured surface closely resembles Travertine marble, provides high sound absorption and excellent light reflection qualities.*

products is the type that consists of a thin metal or fibre pan containing numerous perforations, which are filled with fibrous acoustical material. These too are supplied in squares for easy installation.

While the majority of these products are used in offices, factories, hospitals, and similar places, where the need for sound dampening is more necessary; there is also a growing market for them in homes, particularly in basement play rooms, home workshops, etc.

Technical Data for Salesmen

To quickly estimate the amount of insulation required for any job, the square foot is the most convenient unit.

Depending on the brand and kind of insulation stocked by the dealer, the number of sq. ft. can easily be transposed into rolls, cartons, or bags.

Note: In every instance figure the NEXT LARGER number of rolls, cartons, or bags.

How to estimate side walls from plans—

Rule I.—develop total height from top of foundation wall to upper plate.

Rule II.—measure perimeter of building and multiply perimeter by height to find total gross sq. ft.

Rule III.—count number of single windows and doors; and deduct
15 sq. ft. for each single window
20 sq. ft. for each door
and find
Total net sq. ft. for side walls.

Rule IV. Divide total by the sq. ft. contained in each unit package of insulation and find correct answer.

How to estimate attic ceiling insulation—

Rule I.—find total sq. ft of area by multiplying widths by lengths and find sq. ft. gross area (make no deductions for chimneys nor stair well openings as this will be used up in "trap" or batten doors).

Rule II.—divide gross sq. ft. total by number of sq. ft. per roll, carton, or bag, and arrive at correct answer.

How to estimate attic rafter and gable insulation—

for quick results, increase gross amount of attic floor area by 50%. This will provide for the rafter slopes and gable ends.

To illustrate the ease with which insulation for a whole or part house can be figured by the dealer salesman, the tpical house 24'x30' will be used as an example.

Example of Insulation Estimating

Specification: House—2 story—1/3 pitch, 24'x30'
1st story 8'6"; 2nd, 8' equals..... 16'6"
Add for 1st floor, 2nd floor, and attic joists.... 2'0"

Total height of exterior wall..... 18'6"

1. Estimating walls:—
Perimeter 24'x30'x2=108'x18'6" .....1,998 sq. ft.
Deduct—16 wds. @ 15 sq. ft. ea..... 240 sq. ft.
3 doors @ 20 sq. ft. ea..... 60 sq. ft.
Total deductions ..... 300 sq. ft.
Net insulatable exterior wall area.....1,698 sq. ft.

2. Estimating attic ceiling area:
24'x30'=720 sq. ft..... 730 sq. ft.
Total for walls and attic ceiling.....2,418 sq. ft.

3. Alternative, attic rafter and gable insulation instead of floors:—
24'x30'=720x1.5 (no deductions).....1,020 sq. ft.
Add walls from above.....1,698 sq. ft.
Total for house walls, rafters and gables .....2,718 sq. ft.

Note: Insulation, when furnished in
40 lb. bags (loose) will usually cover..... 20 sq. ft.
Rolls ..... 100 sq. ft.
Cartons 8 batts 15"x48" or..... 40 sq. ft.

In this example, the total amounts for walls and ceiling insulation would be:

2,418 sq. ft. { 25—100 sq. ft. rolls or
61—40 sq. ft. cartons or
121—20 sq. ft. bags

Total amounts for walls, rafters and gables would be:

2,718 sq. ft. { 28—100 sq. ft. rolls
68—40 sq. ft. cartons
136—20 sq. ft. bags

How to Increase the Dollar Volume

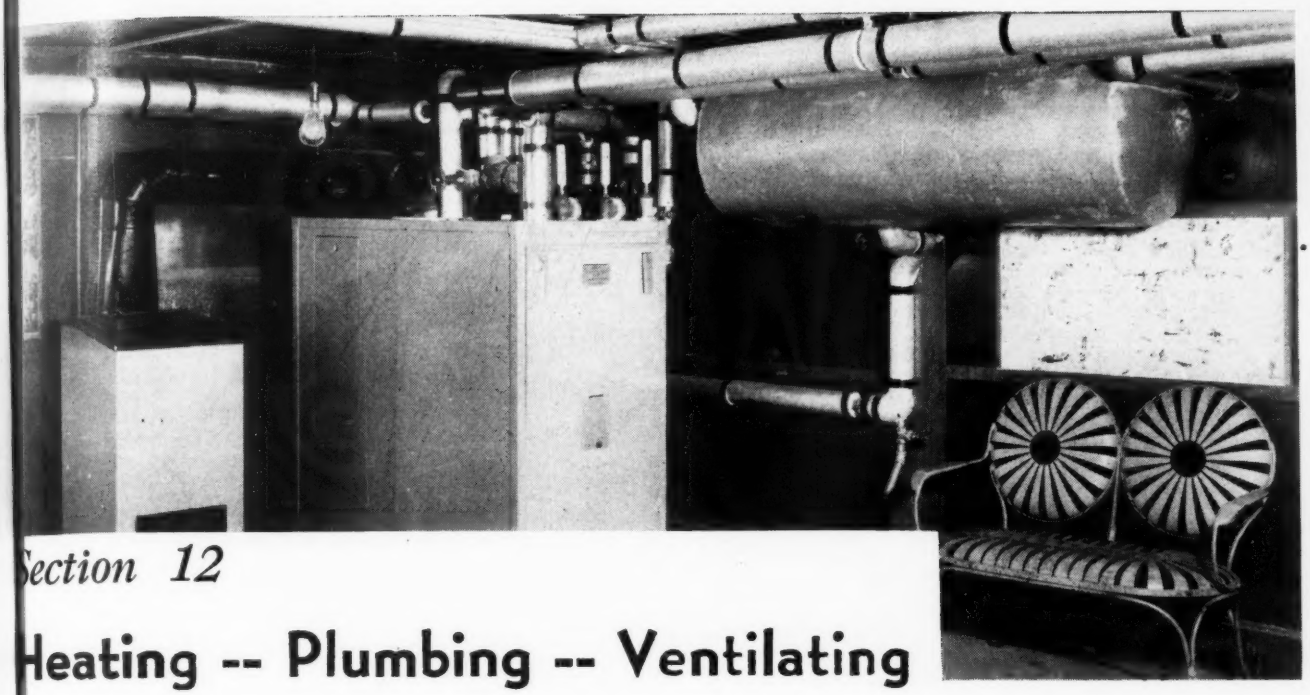
1. Sell the whole house—full thick—include walls!
2. List the storm sash and screens required.
3. Include storm or combination doors.
4. If attic is unfinished and rafters and gables are to be insulated, figure retaining material (refer to Sec. VI).
5. If attic rafters are to be insulated and finished attic stairs is not shown, figure on "Bessler" or equivalent roll-type stairs.
6. Figure flooring to cover attic ceiling joists.
7. Trim for attic windows (weights and cord).
8. All hardware for storm sash, screens, attic windows, storm or combination doors.

Some Items to be Sold With Insulation
— Application Tools
— Fasteners — staples
— Weatherstripping
— Storm windows
— Storm doors
— Vapor barriers
— Ventilators
— Fans
— Louvres
— Caulking compounds
— Combination doors
— Combination windows
— Pipe coverings
— Furnace covering

Sell These ← Related Items

Sell These → Consumer Benefits

Some Selling Points for Insulation
— Cooling comfort in hot weather
— Save fuel
— Lower fuel costs
— Pays for itself in fuel saving
— Healthier homes
— Less house cleaning work
— Smaller heating plant investment
— Less drafts
— Saves painting and decorating bills
— Uniform heating
— Stops heat leakage
— Increases property values
— Makes heating plant last longer
— Year around comfort



Section 12

Heating -- Plumbing -- Ventilating

PLUMBING, HEATING, AND VENTILATING equipment are essential parts of a modern home. Not only are they incorporated into every new structure but they are also in great demand for replacement and remodeling jobs.

Since the building products dealer is being regarded more and more as the consultant for construction data and recommendations in his trading area as well as the supplier of the materials, it is essential that he be thoroughly familiar with the various types of installations that are available in these important lines.

All three fields: heating, plumbing, and ventilating are highly engineered today. A wide selection of systems is available — thoroughly efficient and economical — and designed to give maximum utility in every type of structure.

The importance of the potential business available in the replacement and remodeling field cannot be overestimated. The Indoor Climate Institute estimates that approximately 9 out of every 10 homes in the United States have inadequate heating systems. The same may be said of plumbing systems; and the field of air conditioning and ventilating is a comparatively new addition to the average dwelling.

Many dealers have added this equipment to their line of products and are offering a complete installation service. Others, working in cooperation with specialized contractors, have developed a highly satisfactory volume of business soliciting such installations, and have strengthened their position in their trading area as complete suppliers of basic home materials.

HEATING SYSTEMS

There are seven basic central heating systems available for home heating. Each of these may use coal, oil or gas as fuels. These systems are briefly described as follows:

Gravity Warm Air Systems: This system is economical to install and simple to operate; is well suited to low-cost houses. It is responsive to rapid changes in heating demand and is particularly adapted to a house of compact design.

Principles of Operation: Air circulation in this system depends upon the fact that cold air is heavier than warm air. The cooler air in the room flows downward through return air intakes located in first floor rooms to return air ducts which lead it to the bottom of the furnace casing.

Inside this casing, the air contacts the heated surfaces of the furnace and as it becomes warmer and lighter in weight, it rises and flows out through leader pipes to warm air registers in first floor rooms, or through risers to registers in upstairs rooms.

In this installation all leader pipes should be as nearly horizontal in length as possible; and both leader pipes and return air ducts should be as short as possible. To achieve this the furnace must be centrally located and the leader pipes must slope upward to the registers or risers.

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These factors tend to reduce the amount of usable basement area. Also, since the furnace must be below the level of the rooms to be heated, this system is not suited to a basementless house.

The air may be humidified from an evaporating pan inside the furnace casing. Filters, however, are not used, since they tend to restrict the flow of air.

The system can use an automatic feed or hand feed coal furnace, or an oil or gas burner.

Forced Warm Air System: This system is characterized by its very rapid response to changes in heating demand. It usually costs more to install than the gravity system, but is adapted to larger structures, with or without basement.

Principles of Operation: Positive, controlled air circulation is maintained by a fan or blower. This blower draws the cooler air from the rooms through return air intakes and through an air filter, then delivers it under pressure into the space between the furnace and the furnace casing. Here it absorbs heat from the heated surfaces and passes through the warm air ducts to registers located in the rooms. Since a positive circulation is maintained by the blower, the air ducts can be much longer and somewhat smaller than those in a gravity system.

Moisture is added to the air by a humidifier.

Registers can be located in the ceiling, low or high in the sidewall, in the baseboard, or floor.

The system is not readily usable for summer air conditioning without the addition of cooling coils and cooling equipment, together with provision for a larger capacity blower. If controlled ventilation is desired, a duct leading to the out-of-doors must be provided.

Gravity Hot-Water System: This system is also economical to install as it requires a minimum of special fit-

tings or devices. It has no electrical connections other than those required if controls and burners are used.

Principles of Operation: Circulation in this system depends upon the fact that cold water is heavier than warm water. The cooler water flows downward through return risers and mains to the bottom of the boiler. Inside the boiler the water is heated and as it becomes warmer and lighter in weight, it rises and flows out through the supply mains to the radiators in the rooms.

Since the circulation is by gravity action, the supply and return mains must be large in order to reduce friction. The mains should be insulated to prevent excessive heat loss into the basement. Since the boiler must be located below the level of the radiators, the system is not suited to a basementless house, or the heating of isolated basement rooms.

The system is somewhat slower in responding to temperature changes than a forced hot water system, due to the larger volume of water retained in the pipes and radiators. It may be operated either as an "open" or "closed" system. In the former, the expansion tank is located above the highest radiator and the water is "open" or exposed to the air. In the closed or pressure system **(shown in diagram)**, the expansion tank may be located near the boiler and as the heated water expands, the air in the tank is compressed.

Since an increase in pressure raises the boiling point of the water, higher temperatures may be maintained without forming steam in the radiators. These higher temperatures permit the use of radiators smaller than those needed for the open system.

Forced Hot-Water System: This system is also characterized by its rapid response to changes in heating demand. The radiator temperatures may be modulated or varied in accordance with changing weather so that uniform air temperatures are maintained.

Principles of Operation: The circulation of water is positively maintained by the action of a circulation pump. The water is heated in the boiler and is forced through the pipes (mains and risers) leading to radiators. Two basic types of piping systems are in common use. In the One-Pipe system **(shown in diagram)** a single pipe serves both to supply the heated water to the radiator and to return the cooler water from the radiator to the boiler.

In the Two-Pipe system the heated water is supplied to the radiator through a supply main, and the cooled water is returned to the boiler through a separate return main.

Since the circulation of water is maintained by a pump, radiators may be located either above or below the level of the boiler, making the system adaptable to basementless houses and to the heating of isolated basement rooms.

Since the pump is capable of circulating water against high friction heads, it is possible to use small pipes for the mains and risers resulting in a large amount of usable basement space. Since the smaller surface area of the pipes reduces the heat loss, it is not usually necessary to insulate the mains.

The heating system may be used to provide year-round domestic hot water when heating coils are installed in the boiler.

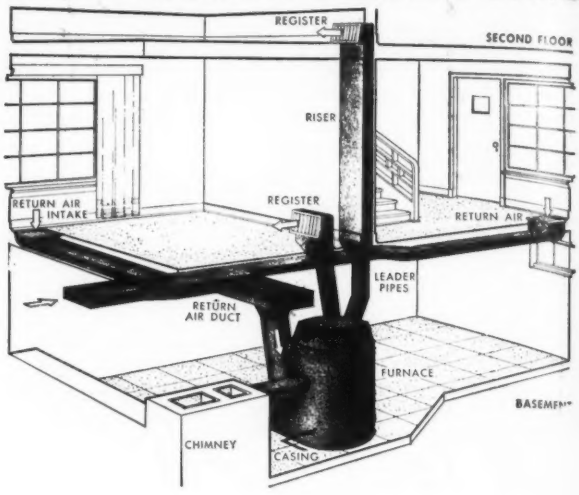
One-Pipe Steam System: This system is economical to install making it suitable for low-cost homes. It has no motors or electrical connections other than those required if controls or burners are used. The disadvantage lies in the fact that heat cannot be modulated or varied. The steam must be all on or all off, in order to prevent the radiators from filling with water. Hence the system is not as responsive to changing demands as the two-pipe steam or hot water systems.

Principles of Operation: Steam is generated in the boiler and as it rises through the single main and individual risers to the radiators, it forces the air out of the system through air valves or vents located on each radiator and at the end of the main.

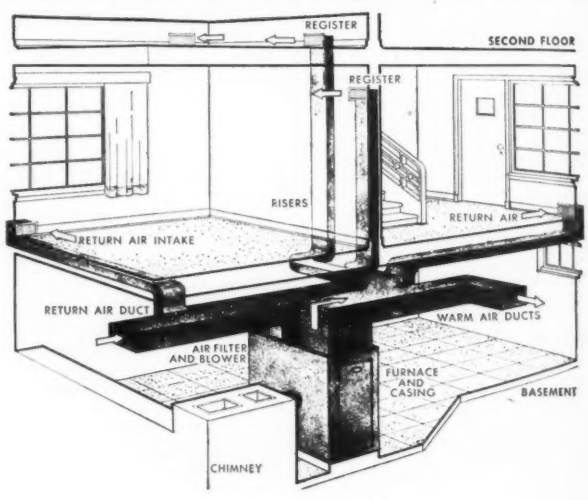
The steam is condensed in the radiators, and the water or condensate is returned to the boiler through the same pipes. Since both steam and water are present in the main, the pipes must be somewhat larger than those of other boiler systems, and the slope or pitch must be very accurately maintained in order to avoid water pockets and "hammer" or pounding in the mains.

The boiler must be located below the level of the rooms

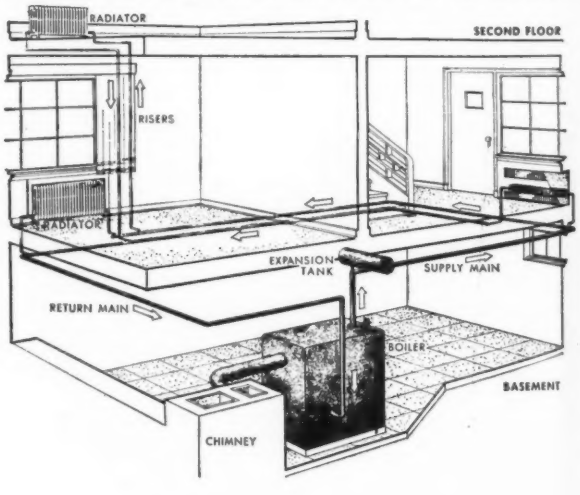
GRAVITY WARM-AIR HEATING SYSTEM



FORCED WARM-AIR HEATING SYSTEM



GRAVITY HOT-WATER HEATING SYSTEM



ON THIS page and the next are illustrated the seven principal types of home heating systems. Each drawing shows the main features of the system it describes but is not a detailed installation guide.

to be heated, so it is not suited to a basementless house.

If heating coils are installed in the boiler, domestic hot water may be obtained from the heating system all year round.

Two-Pipe Steam or Vapor System: This system requires special traps or valves as well as separate supply and return mains. It is extensively used in larger homes and commercial buildings and usually costs more to install than the one-pipe steam or the hot water systems.

Principles of Operation: Steam generated in the boiler rises through supply mains and risers to the radiators, forcing the air in the system through thermostatic traps which are located at the radiator outlets. These traps are designed to pass the air and water but not the steam, into return mains where they proceed to an air eliminator which expels the air through a vent and allows the water to return to the boiler. In this way the air may be kept out of the system for a number of hours, and the boiler may generate steam (vapor) in a partial vacuum, with a correspondingly reduced steam temperature.

Since there are separate supply and return mains, the supply valve can be partly opened without the danger of having the radiator fill with water. Thus, in this system, there are two points at which the temperature may be controlled: 1) The boiler, where a variation in steam temperature is possible, and 2) the radiator, where the amount of steam admitted can be varied.

The system is not suited to a basementless house, or to the heating of isolated basement rooms without the addition of a condensation pump which returns the condensed steam to the boiler, or a vacuum pump which maintains reduced pressures in the system.

Panel Type System: The panel system is well adapted to a basementless house. It usually costs somewhat more than the conventional systems since the house must be specially designed for the heating plant.

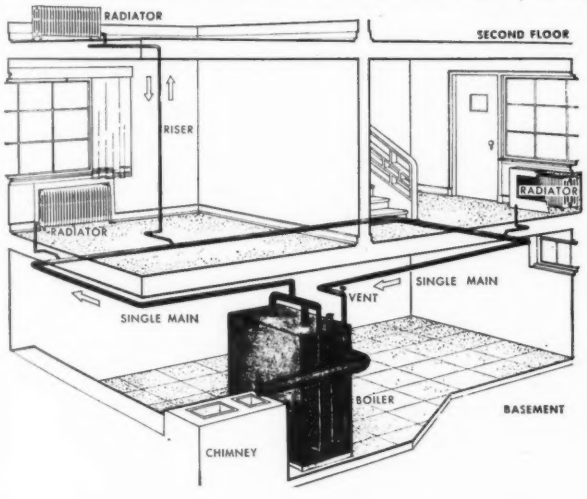
Principles of Operation: In this system, the building structure itself is heated directly with pipe coils or with warm air ducts located beneath the surfaces of ceiling, floor, or wall. The heated surfaces, in turn, warm the objects and the air in the rooms. Either hot water, steam, or warm air may be used.

With a panel system there are no heating units such as radiators or registers visible in the living quarters. Buildings are designed for maximum temperatures of 85 degrees for floors, and approximately 115 degrees for sidewalls or ceilings. The actual air temperatures required for comfort are close to 70 degrees.

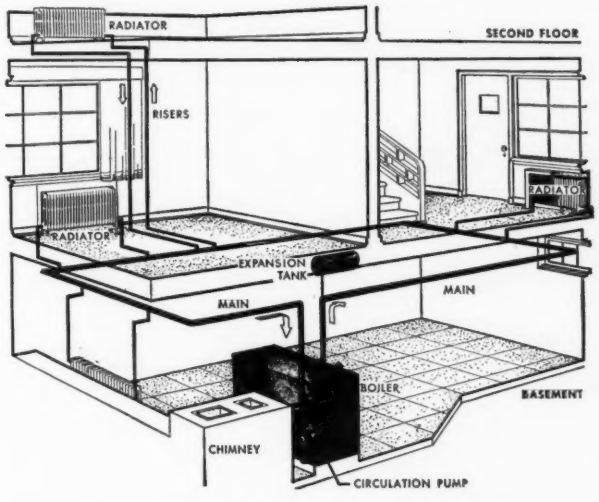
In the true radiant heating system, heat is "radiated" from glowing surfaces such as electrical coils whose temperatures are 1200 degrees or higher. In such a system heat is localized and the heating elements must be carefully placed in order to avoid "hot spots." The air temperature may be maintained well below 70 degrees and still permit the direct radiation to provide comfort.

Baseboard Heating Systems: About 23 years ago Prof. A. C. Willard, then head of the Department of Mechanical Engineering, University of Illinois, and several of his associates made a study of the effect of radiator shape and size on heat distribution in rooms.

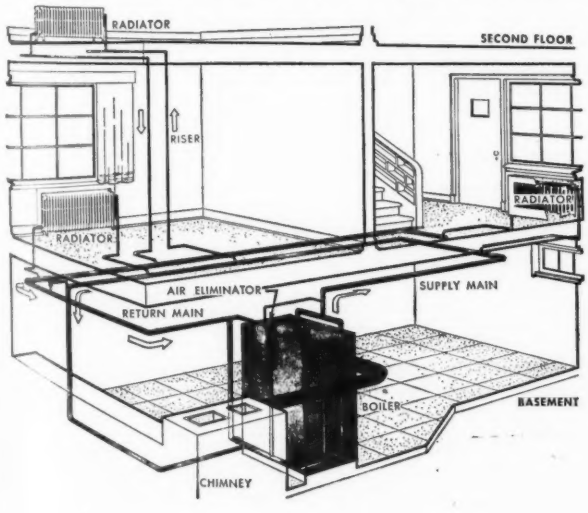
ONE-PIPE STEAM HEATING SYSTEM



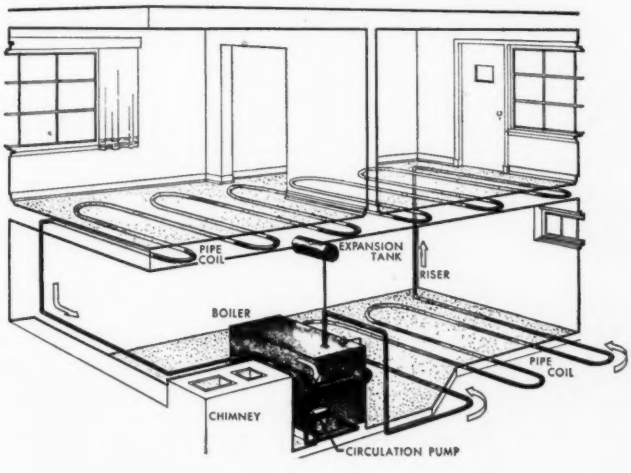
FORCED HOT-WATER HEATING SYSTEM



TWO-PIPE STEAM OR VAPOR SYSTEM



PANEL HEATING SYSTEM



The results directed the attention of the heating industry to the advantages of a source of heat at the floor level. It was found that low radiators produced greater comfort because they directed more of the heat to the lower or occupied section of a room.

Baseboard heating equipment now available is of two general types with respect to material. One is ferrous cast iron type. In its simplest form this is a radiant baseboard, one that gives off most of its heat by radiation. It is known as type "R." It is a hollow cast iron unit which resembles a conventional wooden baseboard in appearance.

Cast iron baseboard units are also offered in the "RC" type which is designed for those rooms where the "R" does not offer sufficient heating capacity. Type "RC" combines the radiant cast iron with fins at the back so as to provide heat by both radiation and convection, thus making it possible to get a larger amount of heat per lineal foot of baseboard.

The second type of baseboard heating is made in two forms, using respectively steel pipe with steel fins or copper pipe with copper or aluminum fins. All of the latter types deliver heat by convection, due to air passing over the fins, and by radiant effect due to the heated metal enclosure surface.

Baseboard heating cannot be used satisfactorily with pipe or two pipe hot water heating systems. The use of a circulator is recommended although there are two-pipe gravity systems in operation. Conventional control systems may be utilized. For best results, boiler water temperature should not exceed approximately 210 degrees in order that the temperature of the water in the baseboard will not be over 200 degrees.

Base board heating cannot be used satisfactorily with one-pipe steam jobs, but is entirely satisfactory with two-pipe steam or vapor.

Simplicity of installation is one of the features which accounts for the growing popularity of baseboard heating. On modernization work all the contractor has to do is remove the wooden baseboard and install the baseboard heating unit in its place. In some cases, it may be practical and desirable to install the baseboard heating equipment right over the existing wooden baseboard.

To compensate for irregularities sometimes found in walls and floors and to provide an even more realistic baseboard appearance, wood moldings are installed at the top and bottom of the R type of baseboard and at the top of the RC type. These are standard wood moldings available everywhere. Moldings are also used in connection with some types of non-ferrous baseboards.

Space Heaters: There is a wide variety of individual-unit space heaters on the market today. All are designed as self-contained heating plants, and their function is to provide heat within a limited area.

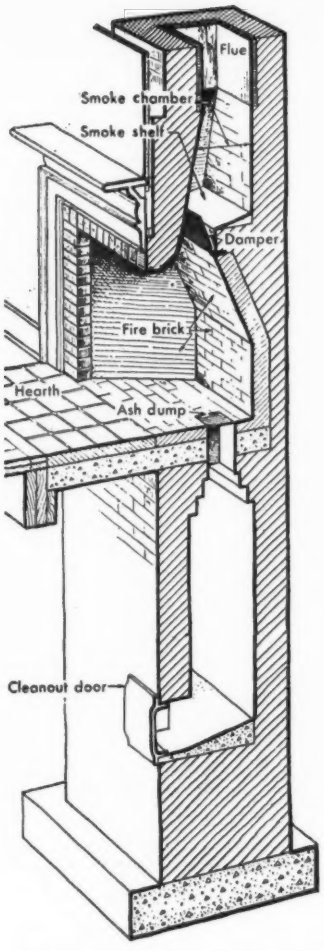
The available types work both on the principle of direct radiation and forced air, the latter type being extensively used in modern factories and similar commercial buildings. They are made to utilize oil, gas, coal, and electricity as fuel.

Demand for this type heating unit is greatest in areas where the winters are mild, and where heating demands are not constant or severe for prolonged periods.

Many building products dealers handle this equipment and find that there is a steady and satisfactory volume of business from it.

The heat pump, costing around $2,000, is luxury equipment for most householders. The principle is basically the same as that employed by the electric refrigerator, offering an automatic method of heating in cold weather and cooling in the summer. Water is the source of the initial heat used by the pump. The compressor is powered by electricity.

Solar heating, experimental studies have revealed, will heat a house under certain conditions. However, since the period when the sun shines is limited, some auxiliary method of heating also must be provided.



The above drawing shows the fundamentals of chimney construction.

CHIMNEYS AND FIREPLACES

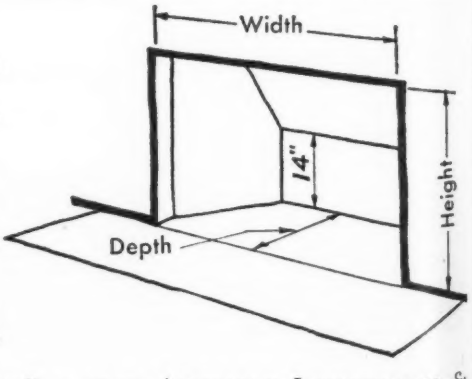
A chimney is a necessity with any fuel-burning equipment. It must be capable of producing and maintaining a draft to bring a supply of fresh air to the fire. It must also carry away particles and harmful gases emitted from the fuel-burning equipment.

The passages through which these gases travel is called a flu. The flu and the entire chimney must be carefully built in order to be free of fire hazards. Defective or overheated chimneys form the greatest single cause of residential fires.

Masonry chimneys must be free standing—giving no support to, and receiving none from the house. A cap of

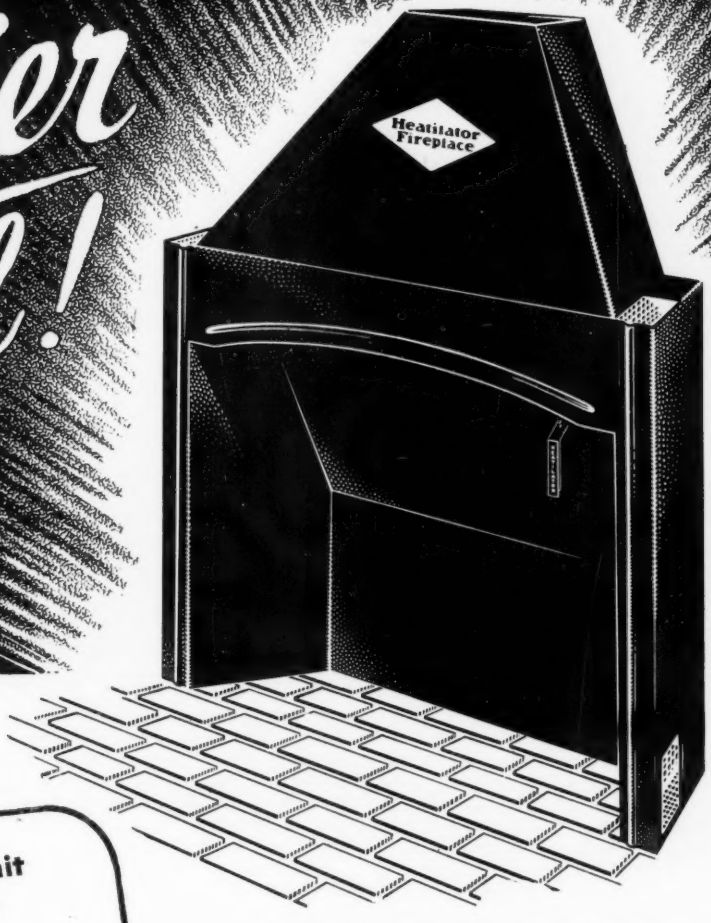
FIREPLACE OPENING SIZE AND FLUE SIZE

	Width	Height	Depth	Flue lining
	inches	inches	inches	inches
Small	28	28	16	8½ x 13 or 10″ round
	30	30	16	8½ x 13 or 10″ round
Medium	34	30	16	13 x 13 or 12″ round
	36	30	18	13 x 13 or 12″ round
Large	40	30	18	13 x 13 or 12″ round

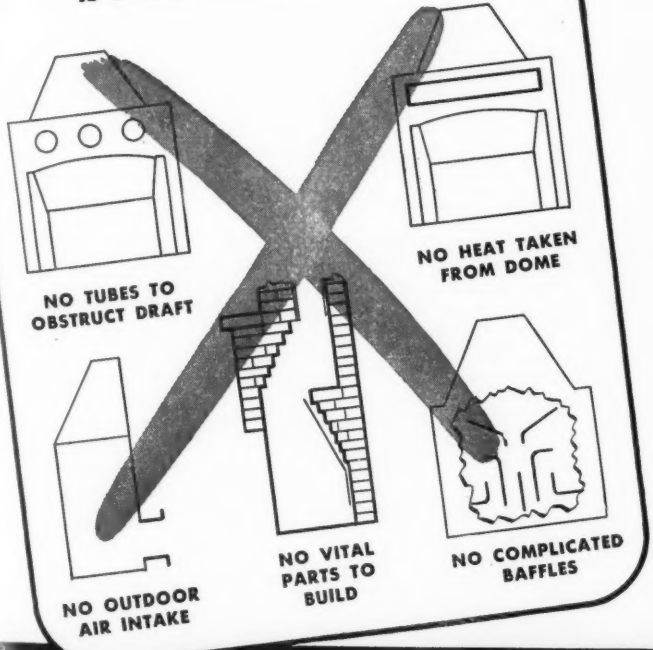


AMERICA'S LEADING FIREPLACE

is Easier to Sell!



The Heatilator Fireplace Unit is scientifically designed.



The Heatilator Fireplace unit is easier to sell because every claim made for it has been proved. For more than 20 years Heatilator Fireplaces have brought new comfort—new utility—to hundreds of thousands of homes and camps all over America.

Today, Heatilator is America's leading fireplace unit because it meets your customer's expectations on every count. Proved by performance—strongly advertised in leading national magazines—a Heatilator Fireplace is first choice among prospective home owners and builders everywhere.

The Heatilator Fireplace unit is sold only through recognized building material dealers. If you are not already cashing in on this easy-to-sell specialty, write today for full dealer information to:

HEATILATOR, INC.
313 East Brighton Ave.
Syracuse, N. Y.

Heatilator Fireplace

*Heatilator is the registered trade mark of Heatilator, Inc.

HEATILATOR FIREPLACE

T.M. REG. U.S. PAT. OFF.

stone or concrete on top of the chimney will shed water and thereby preserve the masonry below. The flu lining should extend through the cap and project above it.

Chimneys should extend at least 2 feet 6 inches above the highest point of the house so that air currents will not be deflected down into the flu.

Where there is more than one flu in the chimney, each flu should be entirely separated from the others, with no cross-connections between them. Brick spacers separate the flu linings in a chimney.

Flu linings are built ahead of the construction of the chimney and the brickwork is laid-up around the lining. Joints must be bedded in mortar or fire clay.

The flu for the heating plant is favored in every way. It is always provided with a flu of its own.

Lightweight and precast chimneys: Several types are available that require no masonry protection and no concrete footings, and are approved by the Underwriter's Laboratories, Inc. They can be suspended from the framing members of the building and require much less space than conventional chimneys.

One type has a double metal wall with the space between filled with insulation. Another has a single wall made of cement-asbestos material. This latter type is approved for use only with gas as a fuel.

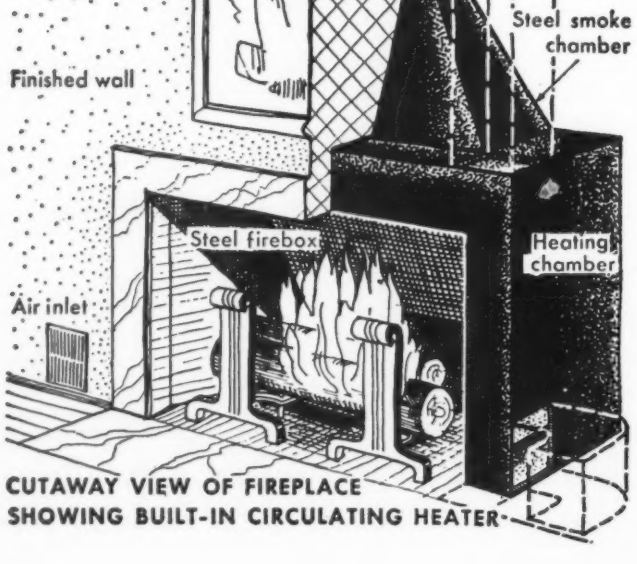
A recent addition to this type of chimney consists of a metal case within which a tile flu is held by a surrounding layer of vermiculite concrete. The unit comes in pre-cast sections, is extremely light in weight, and is adaptable to many types of residences and farm buildings.

The Fireplace: Except in mild climates where other heating system are unnecessary, fireplaces are largely a luxury installation. An ordinary fireplace has an efficiency of about 10 percent, but the cheerful and homelike atmosphere it provides makes it a "must" item with a high percentage of home planners and buyers.

Built-in Fireplace Circulators: The heating capacity of a fireplace can be materially increased by the use of a factory-made metal unit which allows air to be heated and circulated in a system separate from the direct heat of the fire.

In these units a double-walled metal firebox forms a heating chamber at the sides and back of the fire. Cool air enters this chamber near the floor level, and when heated, rises and returns to the room through registers located at a higher level.

Frequently, the unit includes not only the fire-box and heating chamber but also the smoke shelf, damper, throat, and smoke chamber; or the complete fireplace up to the flu. (For further information see Section 2, Metal Products.)



CUTAWAY VIEW OF FIREPLACE SHOWING BUILT-IN CIRCULATING HEATER

12 . . . Heating, Plumbing, Ventilating

Sales Items

Plants & Systems

- Automatic Oil Fired Controlled Heat Furnaces
- Automatic Vapor Vacuum
- Built-in Wall Heaters
- Camp and Cabin Stores
- Coal Burners
- Coal Coke Heaters
- Coal Furnaces
- Coal Heaters
- Coal Wood Heaters
- Combined Heating—
- Cooking Stoves
- Conversion Burners
- Heating Systems
- Built-in Electric Room Heaters
- Electric Room Heaters
- Electric Steam Radiators
- Floor Furnaces
- Gas Fired Boilers
- Gas Heating Systems
- Oil Burners
  - Pot-Type
  - Pressure
  - Rotary
- Oil Burning Circulators

Accessories (Plants & Systems)

- Aluminum Ducts & Pipes
- Asbestos Paper Sheets
- Boiler Cleaning Compound
- Boiler Sealers
- Clinker Tongs
- Cold Water Paste
- Connectors
- Damper Controls
- Duct
- Furnace Cement
- Furnace Fittings
- Galvanized Hot Water Tanks
- Pipe Insulation
- Plastic Fire Brick
- Radiators
- Registers
- Soot Chasers
- Steel Floor Chasers
- Steel Wall Registers
- Transfer Registers
- Oil Burning Radiant Heaters
- Portable Electric Heaters
- Radiant Heating Systems
- Wall Heaters
- Smokeless Stoves
- Space Heaters
- Stoves
- Wood Burners

Water Heaters

- Automatic
- Ball Type Automatic
- Gas Fired
- Cast Iron
- Coal Fired
- Copper Coil Side-Arm
- Electric
- Gas Fired
- Oil Fired

Air Conditioning Equipment

- Air Cleaning Equipment
- Air Filters
- All Year Gas Air Conditioner
- Blowers
- Coal Fired
- Combined Heating & Air Conditioning
- DeHumidifier
- Dust Precipitators
- Fans
- Gas Fired
- Humidifiers
- Individual Room Conditioners
- Oil Fired
- Plug-in Type Room Units
- Room Coolers
- Ventilators
- Year Around Air Conditioners

Louvres

- Box France Type
- Flange Type
- Utility Cores

Heating and Temperature Controls

- Aquastats
- Automatic Room Temperature Control
- Clock Thermostats
- Personalized Heat Controls
- Regulators
- Thermostats

Fireplace Accessories

- Andirons
- Ashdump
- Ash Pit Doors
- Bellows
- Brick
- Broiling Forks
- Brush
- Charcoal Stoves
- Chimney Tops
- Clean Out Doors
- Craves
- Dampers
- Dome Dampers
- Dutch Ovens
- Electric Fan Grilles
- Fire Baskets
- Firebrick
- Flue Linings
- Flues
- Fuel Containers
- Grilles
  - Cast Iron
  - Louvre
- Lighters
- Log Rests
- Mantels
- Poker
- Registers
- Screens
  - Curtain
  - Folding
- Shovels
- Spark Arresters
- Steak Grill
- Steel Angles
- Tile
- Tongs

INCINERATORS

An important addition to any complete heating system is an efficient, self-contained refuse burner. There are many of these available, manufactured as complete units that are installed in the basement or utility room, and which are exhausted through the regular chimney flu. They provide the convenient, safe, sanitary, and odorless way of burning all wet or dry garbage and other refuse. The waste itself serves as fuel. (For complete data, see Section 2, Metal Products.)

PLUMBING

There is nothing sensationally new in plumbing inasmuch as manufacturers are concentrating on keeping up with the great demand for present fixtures. Improvements are in fittings, more flat space on lavatories, variety of sizes, and beauty. Color is back in tubs, lavatories, and water closets but white is still the most popular. A new trend is having a shower cabinet in the first-floor powder room adjoining the kitchen.

Basementless houses are being designed with utility rooms for laundry facilities. New laundry tubs have double and single compartments with swinging spout and flat back ledge for cleaning compounds, etc. Integral scrubbing boards with raised ridges make cleaning of exceptionally dirty clothing much easier for the housewife. It has been found that automatic washing machines are not enough to do all the cleaning, hense the new laundry tubs are becoming more and more popular.

New water-softening equipment is available which makes dishwashing and clothes-washing much easier and also prevents discoloration of kitchen utensils. Chemical compounds to prevent corrosion in water heaters and piping are receiving added attention, as they have definitely proved their value in increasing the life of this vital equipment.

Plumbing is customarily divided into three parts—the fixtures, the water supply system and the sewage disposal system.

Through the water supply system the house is booted up with an outside source of water supply, either a private or public utility.

Through the sewage-disposal system, the refuse of bath and kitchen flows to the city sewage system or a private septic tank.

Because labor and roughing in materials account for nearly two-thirds of the cost of plumbing in a house, it is possible for the dealer to supply two bathrooms for less than twice the cost of one.

Laying Out Plumbing System

Two considerations should control the layout of a plumbing system: (1) the inclusion of the necessary fixtures for bathroom and kitchen served by an adequate drainage and hot-and-cold water system; (2) a special effort to make the plumbing installation economical by concentration of the location of fixtures.

ISLAND displays of small plumbing items are the source of considerable cash business from home owners who carry out minor repairs and modifications themselves.

For greatest economy, it is desirable in one-story houses to plan the kitchen and bathroom as adjoining rooms, but with sufficient space in the separating wall to carry the necessary plumbing lines. Through this combination of rooms and by placing the fixtures in the adjoining rooms along the common wall, only one vent stack is required for all the fixtures, and the lengths of drainage and water lines are reduced to a minimum.

In two-story houses it is desirable to have the plumbing fixtures on the second floor located over the fixtures on the first floor, so as to assure a concentration of mechanical equipment, minimizing drainage and water lines and permitting a single vent stack.

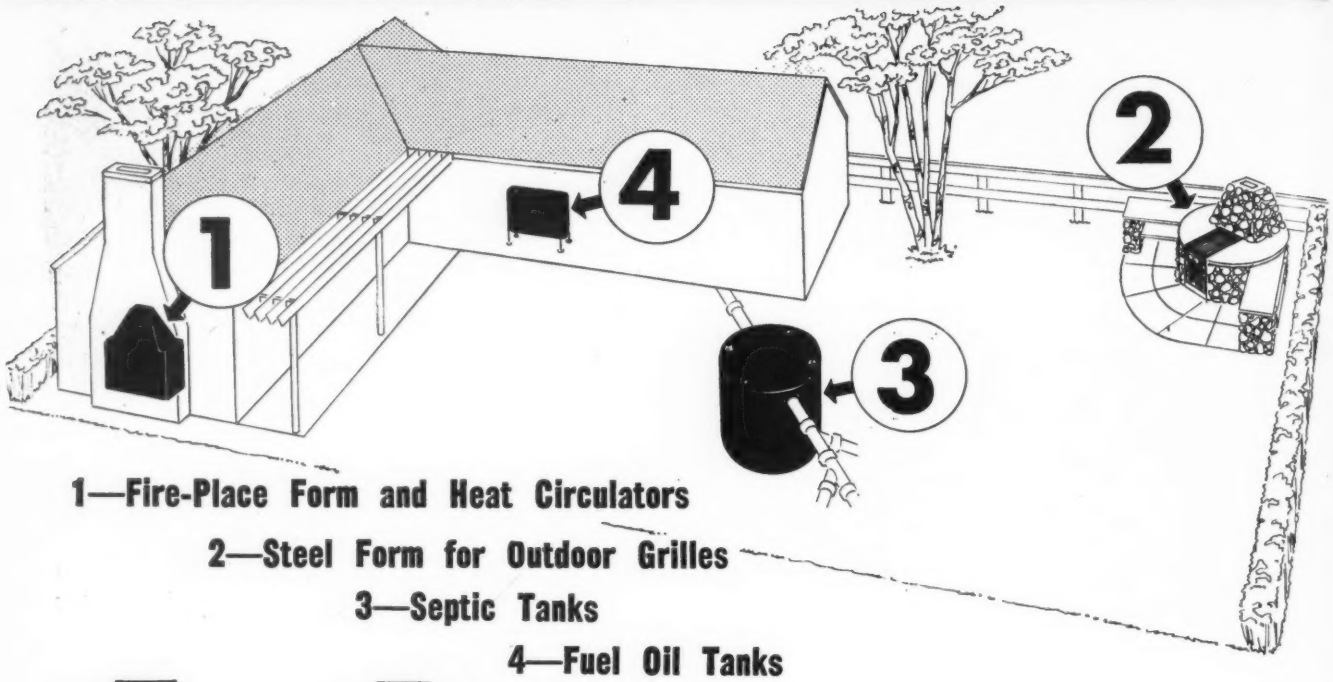
In small dwellings at least one laundry tray should be provided. In the case of one-story houses, due to space limitations, it may be advisable to include the laundry tray in the kitchen in combination with the sink. In two-story houses, where more utility space is provided, a double laundry tray should be located in the utility room as near the kitchen plumbing as possible.

With the exception of the water closet which should be of vitreous china, the plumbing fixtures should be either cast iron or pressed steel with an acid-resistant porcelain enamel finish. The fixture fittings should be of good quality, of a type which can be easily repaired or replaced. Chromium finish on fittings and exposed pipe is desirable, due to its high resistance to corrosion.

Plumbing fixtures should be of good quality, but care should be taken to avoid the installation of fixtures too costly in proportion to the total cost of the dwelling. As a general rule the cost of the plumbing system complete should be about 12 percent of the total cost of dwellings.

BAY displays that show a modern bathroom as it will look installed are powerful sales tools, not only to contractors but to consumers as well.

PRICE Offers You 4



1—Fire-Place Form and Heat Circulators

2—Steel Form for Outdoor Grilles

3—Septic Tanks

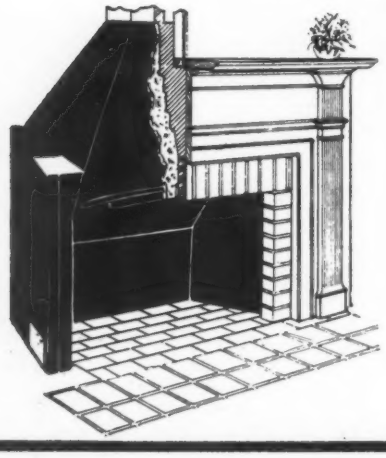
4—Fuel Oil Tanks

Fyro-Place —The New and Better Fireplace Form and Heat-Circulating Unit

20 years of "know-how" . . . by the men who invented and were leaders in perfecting the modern accepted standard of heat-circulating fireplace units . . . is responsible for the improved FYRO-PLACE Unit with many outstanding advantages.

Every Home Buyer Wants A Fireplace

Thousands of people have asked for our book "100 Fireplace Ideas" offered in National Advertising. It has answered their questions "what style fireplace" to build, "what materials to use" and "what advantages are obtained with the Fyro-Place."



Copy of our "large edition" of this valuable book will gladly be mailed to you FREE on request. Also, we'll send our new Instruction Sheet. It illustrates the most important steps in building a heat-circulating fireplace. Tells how to direct heat to other rooms . . . how to conceal grilles, etc. It's valuable information to have. Get it.

SPECIFICATIONS FOR ORDERING YOUR FYRO-PLACE

Unit Number	Finished Width	Finished Height	Flue Sizes For Chimneys Over 20 ft.	Flue Sizes For Chimneys Under 20 ft.
28	27"	25"	8½ x 13"	8½ x 13"
31	30"	25½"	8½ x 13"	8½ x 13"
35	34"	26"	8½ x 13"	13 x 13"
39	38"	28"	13 x 13"	13 x 13"
44	42"	31"	13 x 13"	13 x 18"
50	48"	33"	13 x 18"	13 x 18"
62	60"	36"	13 x 18"	13 x 18"

• • **PRICE Fireplace**
93 Austin Street

Good Profit Opportunities

Sell FYRO-GRILL—*The Long-Wanted Low-Cost Form for Outdoor Fireplaces and you sell brick or stone, mortar and aggregate.*

DIMENSIONS:
Length 21½"
Width 17"
Height 22"

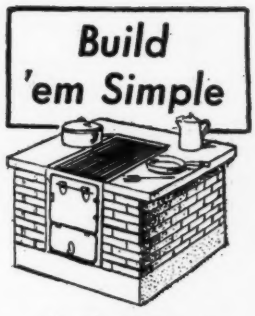
LOOK! All this for $19.95 Retail

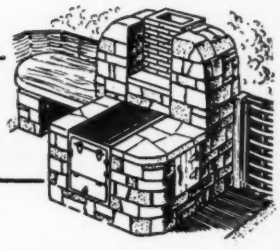
A heavy gauge steel unit that's a complete fireplace in itself. Steak grill is removable for cleaning and storing out of the weather. Two position grate, adjustable for fuel used. Heavy sheet steel back and sides around which any type of masonry can be placed.

Stock and advertise Fyro-Grill. Display it in your window or on your floor. Every sale means additional sales of brick or stone, mortar, aggrigate, etc.

Every one with a back yard is a prospect.

New Business for You.





PRICE SEPTIC TANKS

for HOMES AND SMALL INSTITUTIONS

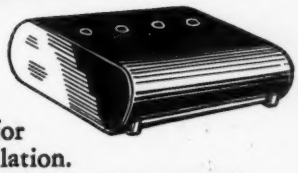
Price Septic Tanks are constructed of 14 gauge steel. Coated for protection against corrosion. Tanks are made in 200, 300 and 500 gallon capacity. Each tank has bolted, removable cover. Intake and outlet openings take 4-inch pipe. Intake and Outlet baffle plates control the flow of sewage within the tank.

Unit Number Gallons Capacity	Dimensions		*No. of Persons Served		Weight of Tank
	Dia.	Depth	Home	Factory	
200	38"	48"	4 to 6	12	225
300	46"	48"	6 to 9	20	290
500	52"	60"	10 to 18	30	405

*Health authorities recommend that septic tanks should never be overloaded. In figuring capacity, NEVER, eve. for temporary use, exceed the maximum ratings shown.

PRICE FUEL OIL TANKS

For Basement Storage
275 Gal.
250 Gal.
220 Gal.



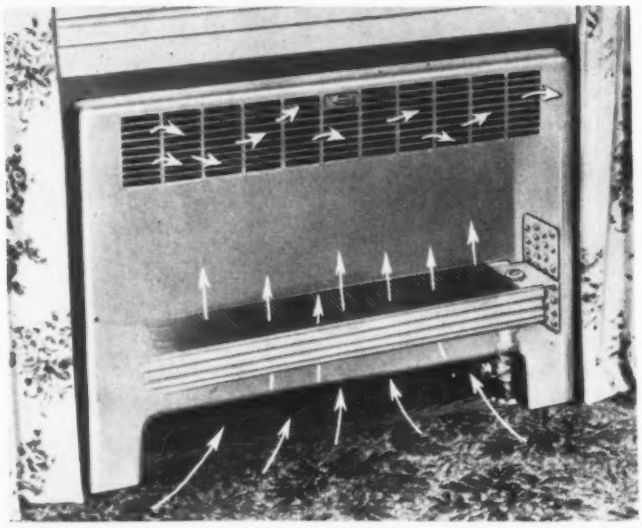
Price Fuel Oil Storage Tanks are abround in shape and are furnished either for vertical or horizontal installation. Tanks are manufactured to Underwriters' Specifications, bear Underwriters' Labels.

SPECIFICATIONS	
Tank Capacity	Size
275 gal.	27⅜" x 44¼" x 60"
250 gal.	27⅜" x 44¼" x 54"
220 gal.	27⅜" x 44¼" x 48"

Four 2" openings are provided at the top, and a ½" opening at the end. Four brackets are tapped for 1¼" pipe legs. Each tank is painted blue gray.

Heater & Tank Corp.

Buffalo 7, N. Y.



CUTAWAY view of one of the new convector radiators shows how air is drawn through the heating unit, warmed and then sent out into the room by natural convection. Hot water or steam, circulating through the heating unit within the enclosure, warms the air.

Water Closet Bowls

There are three major types of water-closet bowls: the siphon jet, the reverse trap and the washdown. The siphon jet, because of its deeper water seal, its larger trapway and its very large water area, is preferred. Since dirt does not stick to a wet China surface, a large amount of water area is an advantage.

The reverse trap bowl is an intermediate bowl. It has a medium size water area, an integral flushing rim and jet and a minimum water seal of 2½ inches.

The oldest and most competitive type is the washdown bowl. The minimum area of its water surface is 8x7 inches. It has a trapway and depth of seal about the same as the reverse trap and the exterior styling is largely utilitarian. Any of these types of water closets may be used in connection with a tank or a flush valve.

Drainage system—the house drainage system should consist of a main trap with a fresh-air intake on the house side of the main trap running to the outside of the house, either with an inverted U or a screened wall vent. The placement of the fresh-air intake under any window or adjacent to a door should be avoided. The main house drain stock should extend above the roof not less than 1 foot. A main vent pipe should be connected to the stack below the lowest fixture and carried up to a point above the highest fixture where it may again enter the stack or pass through the roof separately. Each fixture should be individually vented into the main vent.

Attention to the following points will insure a durable, adequate drainage system: (1) High quality of materials and workmanship, (2) well calked and sealed joints, (3) proper sizing of drainage and vent piping, (3) individual venting of fixtures, (5) proper pitching of mains and branches, (6) clean-out facilities at bends in drainage piping, (7) proper traps.

In localities where neither water supply nor sewage utilities are available private utilities may be required. These would ordinarily consist of:

1. Sewage disposal system, involving the use of a septic tank and tile field.
2. A water-supply system with pump and storage tank for either shallow or deep well.

Sewage disposal—The problem of private sewage disposal is one which must be very carefully handled due to danger of pollution of water supply. Good practice dictates that: (1) septic tank should be water tight and of durable construction; (2) septic tank should not ordinarily be located on a lot of less than 5,000 square feet in area, and, when combined with a well, additional precaution must be taken to avoid the possibility of contamination of the well; (3) tile field should be laid out after checking carefully the rate of absorption of the soil and the number of occupants; (4) lay-out of tile field should be carefully checked in relation to the general terrain, elevation, and slope to water supply; (5) a septic tank of less than 300 gallons capacity should not be used.

Home water supply—For home water supply, the source of water should be carefully checked against possible pollution. The vertical distance between the level of the water in the well or other source to the location of the pumping plant must be determined, in order to select the proper type of equipment. If this vertical distance is 22 feet or less, the equipment will be classed as "shallow well." If this vertical distance is more than 22 feet, the equipment will be classed as "deep well." Unit home pumping plants are available powered either by gasoline engines or electric motors. In case electricity is not available, the gasoline-powered unit may be used.

Important considerations in installation of the home pumping plant are: (1) good workmanship in installation, (2) high quality materials, (3) avoidance of trapping in any lines, (4) well-lubricated and well-packed pump, (5) adequate storage tank.

Extreme care must be exercised in the design and location of wells and sewage disposal plants, especially when both occur on the same plot.

The domestic demand for hot water quantity has been stepped up by two comparative newcomers in the home appliance field—the automatic clothes washer and the automatic dishwasher. One way to find out the water heating capacity of several units being considered is to learn the number of gallons the water heater can deliver in any two hours, starting with a full tank.

Water Heaters

Many of the new automatic water heaters are equipped with a temperature dial which the owner can operate as he does his radio dial, setting the thermostat at any degree he wants—all the way from 100 up to 180 degrees.

Qualities to consider in judging a water heater are all-around choice of materials, workmanship, temperature control and storage tank facilities.

Installation is the fifth important guidepost in selecting an automatic water heater. Many first-class water heaters do not give top service because of poor installation. The heater should be placed as close as possible to the most-used faucet, which is usually the kitchen faucet. The purpose is to make the pipe run as short as possible and save water and fuel.

ATTIC VENTILATION

Attic ventilation is a means of drawing air from the out-of-doors through the home and exhausting the air from an attic space, cooling the home throughout during this process. Proper installation of the attic fan will change the air in the entire house. With a properly installed fan, the windows in the downstairs rooms may be opened after sundown, the fan started, and the air from the out-of-doors pulled through the entire house.

Attic fans can also be used for daytime cooling. Where homes have basements, the upstairs windows may be closed, basement windows left open with the door leading to the basement also open. The basement air can be drawn through the house, cooling the home.

In addition, the fan can be used to flush the house of smoke or odors with or without the windows open. When there is a fireplace in the house, the fan should never be used while windows or doors are closed without first making sure that the fireplace chimney damper is also closed. The fan should never be used when the fire is going without windows being opened.

The size of the fan selected will depend on the size of the home and its geographical location. For example, in the northern and central parts of the United States, the fan should be capable of moving the air out of the living quarters (not the basement or attic) every two minutes. This is known as a two-minute air change. In the southern states it is desirable to have a one or one-and-a-half minute air change.

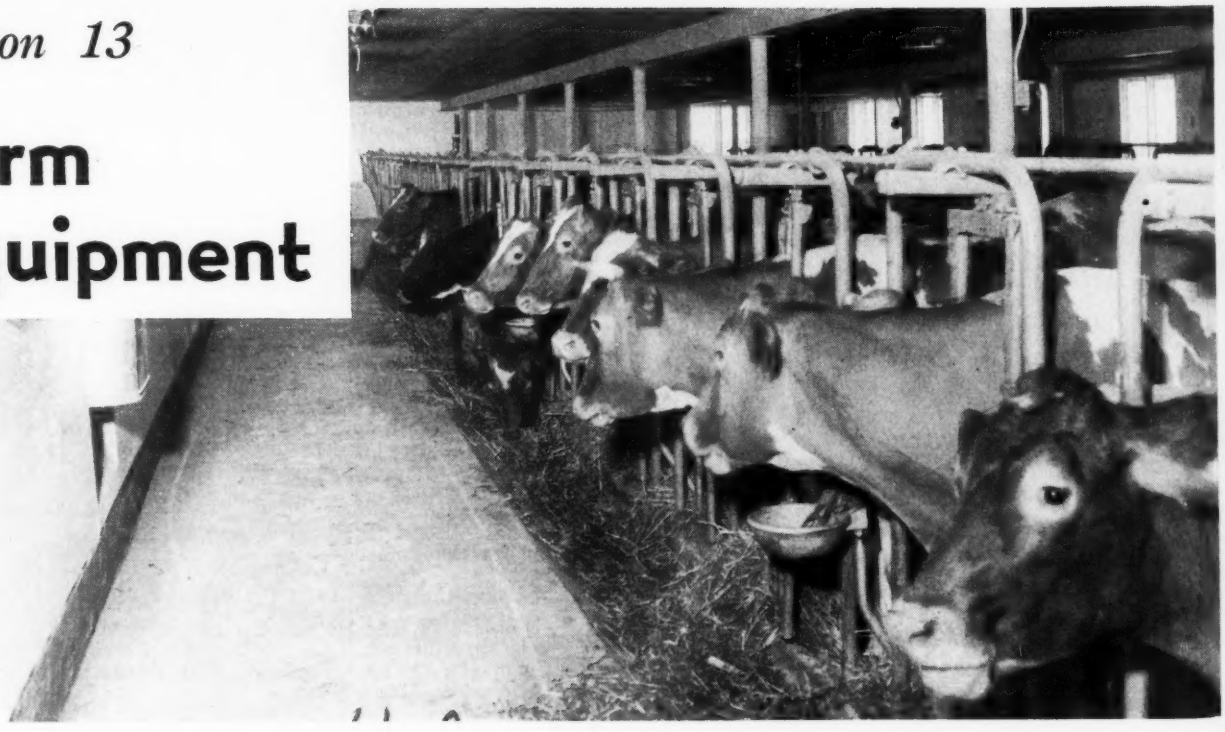
Automatic control by means of a time clock will shut off the fan at a predetermined time, usually in the early morning hours.

Louvres, incidentally, are an essential part of all attic construction, whether the space is utilized as a part of the home or not. They provide a circulation of air between the ceiling and rafters, and prevent excessive heat build-up in that area when the roof is subjected to direct summer sunlight.

Louvres, therefore, are an essential item of merchandise for the building products dealer.

Section 13

Farm Equipment



THE MANY THOUSANDS of retail building material dealers who have served rural communities for the past fifteen years, have witnessed a marked change in the customers they serve. Farming has become a scientific business, one that has been highly profitable in recent years.

The distinction that formerly was drawn between farm and city dwellers is rapidly disappearing, for farm homes and buildings are as modern and as convenient as any to be found.

Many dealers have adapted their merchandising programs to meet this change. They have found it highly worthwhile to develop sales organizations to supply completely equipped barns and other farm buildings, as well as many other farm supplies that are closely allied with the building materials they have normally carried.

The package selling idea has been particularly well received by present day farmers who have come to think in terms of a complete structure, equipment and all, rather than its individual components.

In rural areas particularly, the dealer has a closer and more personal contact with his customers. This puts him in a splendid spot to expand his services to fully meet the farm supply requirements in his area. A study of the market will soon supply the dealer with the necessary information to plan and organize an effective sales program to develop such business.

Your first step in making a local survey should be a visit to your county agent's office for a detailed discussion of the types of farming carried out in your trading area and the importance of each type from an income standpoint.

Ask the county agent to help you make up a local building calendar so that you can gear your activities to the time your farmers would logically do certain improvements and new building. Find out if there is any particular building problem in your area around which you can center your activities.

Next, go to the tax assessors' office and spend some time bringing yourself up to date on the names of farm owners. Plot the farms on a map so that you can go out and size up the condition of the buildings. This can be done from the highway and it is amazing what an accurate appraisal can be made in this way.

Because of the necessity of housing his livestock, produce and machinery, in addition to his family, the farmer buys three to five times as much building material as the average city dweller. With city living standards reaching into the country, farmers are anxious to reduce physical labor and drudgery and at the same time increase their output.

Any dealers with a rural market could set up a quota of one new farm home per year for each forty families, and one new barn per year for each eight families over the next five years. This in addition to the enormous market for other types of buildings and building improvements and specialties.

There are 7,400,000 occupied farm homes, 35 percent of which need exterior repairs and improvements and 45 million other buildings, 75 percent of which need improvement.

This spells an opportunity so great that many types of aggressive building product merchants other than lumber dealers have, in increasing numbers, begun to service this market.

However, because he is the nearest available merchant, the lumber and building product dealer has the inside track on this business if he will aggressively organize to service it.

It is to assist such organization by the dealer that this section has been prepared.

We will attempt to portray here, in terms of reliable services, a complete farm department for each dealer to study, and to determine the limits of his individual approach and service to local farmers.

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FARMERS, like consumer customers in the cities, think of farm equipment and supplies in terms of the total installation. Building material dealers, as the suppliers of a major portion of the materials used in construction and installation, are the logical source of numerous allied items used in the complete unit.

SALES ITEMS

Housing the Hog

A-Type Hog House
Arched-roof Hog Houses
Barns
Breeding Rack & Stanchion
Brooder Houses
Brooder Stoves
Brooders
Chutes
Colony Houses
Cots
Dipping Vats
Electric Pig Brooders
Farrow Houses
Feeding Floors
Fountains
Loading Ramps
Mineral Feeders
Movable Houses
Oils
Oilers, Pasture Shade & Shelter
Pens
Pig Creeps
Rotary Oilers
Rings
Scrapers
Self-Feeders
Alfalfa
Corn
Shed Roof Hog Houses
Shipping Crates
Sun Shades
Troughs
Vaccinating Racks
Watering Trough
Wallows

Housing Cattle

Arched-Roof Barns
Beef Cattle Barns
Breeding Racks & Stalls
Stalls
Bull Pens
Calf Barn
Calf Feeders
Cattle Chutes
Cattle Feeders
Cattle Guards
Cattle Sheds
Corrals
Cupolas
Dairy Cattle Barns
Dairy Cold Box
Dehorning Chutes
Feed Locks
Feeding Bunks
Feeding Floors
Gable Roofed Barns
Gambrel Roof Barns
General Purpose Barns
Grain Bunks
Loafing Sheds
Mangers
Milking Pens
One Story Barns
Open Shed Milking
Stables
Self Feeders
Silos
Stalls
Stanchions
Summer Shelters
Tanks
Troughs
Two Story Barns
Ventilators
Waterers

Housing Sheep

Dipping Vats
Feeding Racks
Feeding Troughs
Lamb Brooders
Lamb Feeders
Sheep Barns
Sheep Sheds
Sheep Pens

Housing Horses

Corrals
Horse Barns
Range Shelters
Shelter Pens

Housing Poultry

Baby Chick Waterers
Benson Type Poultry Feeders
Brooder Draft Controls
Brooder House Heaters
Brooder Houses
Chick Feeders
Chick Fountains
Colony Brooder Houses
Dropping Boards
Dry Mash Feeders
Egg Shipping Cases
Flock Feeders
Fowl Killers
Heated Fountains
Hen Feeders
Hovers
Incubators
Inside Mash Hoppers
Laying Houses
Laying Nests
Laying Traps
Leg Bands
Movable Roosting Shelters
Oyster Shell Feeders
Poultry Alfalfa Racks
Poultry Coops
Poultry Fencing
Poultry Helmets
Poultry Netting
Poultry Pickers
Poultry Scalders
Poultry Scales
Poultry Shelters
Poultry Sun Parlors
Range Feeders
Range Shelters
Roosting Frame for Turkeys
Roosts
Sanitary Runways
Self Cleaning Nests
Shipping Cases
Shipping Coop
Straw Loft Poultry Houses
Turkey Nests
Waterers
Wing Bands
Wire Baskets

Housing the Products of the Farm

Combination Hog Houses & Grain Storage
Combination Poultry Houses & Grain Storage
Corn Cribs
Granaries
Grain Bins
Grain Boxes
Grain Elevators
Hay Barns
Hay Sheds
Pole Corn Cribs
Silos
Stack Covering

Miscellaneous

Dairy Cold Boxes
Egg Candling Rooms
Farm Bottling Plants
Meat Houses
Milk Houses
Smoke Houses

Vegetables & Fruits

Apple Box Elevators
Apple Storage
Bushel Crates
Fruit Cellars
Potato Hoppers
Potato Houses
Vegetable Storage

Housing Machinery

Machine Sheds
Combination Shed & Shop
Combination Shed & Garage
Machine Shelters
Laminated Rafters for Curved Roof Sheds

Yard—Fabricated Portable Farm Buildings

Poultry Houses
  Metal
  Wood
  Asbestos
Milk Houses
  Metal
  Wood
  Asbestos
Calf Sheds
Tanks
Hay Racks
Hog Troughs
Utility Houses
Bunk Houses
Farrowing Houses
Road Side Stands
Hog Houses
  Metal
  Wood
  Asbestos
Grain Bins
Brooder Houses
  Hog
  Chicken
Self Feeders
Loading Chutes
Billbords
Smoke Houses
Farm Tenant Houses
Windmill Towers made with Lumber Connectors

Hardware for the Farm (See Hardware Section)

Barn & Garage Door Stops
Barn Door Hardware
Barn Door Latches
Barn Door Pulls
Barn Door Rollers
Barn Door Stays
Barn Door Tracks & Hangers
Bean Poles
Binder Twine
Chain Bolts
Cow Bells
Cow Stalls
Hand Pumps
Harness
Hay Forks
Hay Knives
Horse Blankets
Lanterns
Litter Carriers
Mangers
Rope
Salt Boxes
Scythes
Sheep Bells
Sickles

A Great Business Builder

Pioneer

THE STRONGEST FENCE KNOT MADE

The special construction of the PIONEER KNOT makes Continental Fence semi-flexible. It "gives" under pressure, then comes back . . . stands up straight.

● You'll boost business volume all the way down the line when you feature the fence with the selling features. Continental Fence offers greater sales opportunities because it attracts customers . . . makes selling easier. It's the only fence with the semi-flexible PIONEER KNOT . . . the knot that actually tightens under strain. Continental Fence is made of corrosion-resistant copper steel, zinc coated by special process, and *Flame-Sealed* for extra protection against rust. To build your own business, sell widely advertised Continental Fence. Farmers respect it—and the dealer who sells it. Contact your jobber or write Continental at Kokomo.

CONTINENTAL STEEL

CONTINENTAL STEEL CORPORATION

GENERAL OFFICES • KOKOMO, INDIANA

PRODUCERS OF—15 Types of Farm Fence, Posts, Gates, Barb Wire, Nails, Staples, Lawn Fence, Wire Products

YARD fabricated farm buildings have long been a popular item of farm equipment supplied by the building material dealer. There is a steady, high demand for these items.

Crow Bars
Dinner Bells
Disinfectants
Door Handles & Pulls
Door Holders
Door Knockers
Electric Fly Screens
Feed Boxes
Fire Extinguisher
Foot Bolts
Gaskets
Gate Hinges and Fasteners
Grind Stones
Slop Barrels
Stall Guards
Tank Heaters
Tomato Sticks
Tools
Turkey Bells
Well Buckets
Well Chains
Well Ropes
Whet Stones
Wire Stretchers
Wrecking Bars

Farm Fencing and Gates

Barbed Wire
Chick Mesh Poultry Fence
Close Spaced Poultry Fence
End Posts
  12½ Gauge
  11 Gauge
  11 Gauge
  9 Gauge
  9 Gauge
32" Hog and Field Fence
Post Drivers
Poultry Netting
Spiral Stays
Steel Corner Posts
39" Stock and Field Fence
  12½ Gauge
  12½ Gauge
26" Hog and Field Fence
  14½ Gauge
  14½ Gauge
  12½ Gauge
  12½ Gauge
  11 Gauge
  11 Gauge
  11 Gauge
  9 Gauge
  9 Gauge
47" Stock and Field Fence
55" Stock and Field Fence
Wire Stretchers
Gate Posts
Side Wall Gates
Tilting Gates

Rough Hardware—Wire Fencing

Barbed Wire—Sold in 80 rod rolls. Two gauges, 14 and 12½. Two types—2 point and 4 point. Two spacings—4" and 5".

Farm Fence—All Purpose—Sold in 330 ft. rolls. 3 Weights: Light, 11 Gauge top and bottom wire; 14½ gauge live and stay wire; Medium, 10 gauge top and bottom wire: 12½ gauge live and stay wire; Heavy, 9 gauge top and bottom wire; 11 gauge live and stay wire. Heights 26", 32", 39" and 47".

Galvanized Smooth Wire—Comes in 3 gauges—9, 12 and 14.

Heavy Weight Poultry Fences—Comes with variable mesh ranging from 1½" at bottom 5" at top; also in 48", 60" and 72" heights. Stay wires are 6" apart. Top and bottom wires 11" gauge. Live and stay wires 14" gauge.

Poultry Netting—Made from full-gauge steel wire—galvanized before weaving. Use 2" mesh for large poultry, 1" for small chicks. Comes in 150 ft. rolls. Chick netting comes 12", 24" and 36" lengths. Poultry netting comes 48", 60" and 72".

13 . . . Farm Equipment

Welded Wire Pen & Utility Steel Fabric—For poultry floors, corn cribs, trellis, feeding racks, tree guards, sorting screen, etc.
Mesh sizes, 1 x 1, 1 x 2 and 2 x 4.
Gauges 15, 14 and 12½.
Widths 24", 36" and 60".

Additional Items:
Electric Fence Equipment
Post Hole Diggers
Posts and Gates
Staples for Fencing
Wire Reelers

Electricity on the Farm
(63% of all Farms are now equipped with Electricity.)

Churning
Cider Presses
Cistern Pumps
Clippers
Cream Separators
Dehydrators (Fruit & Vegetable)
Dish Washing Machines
Electric Appliances See Electrical Section
Electrified Fence
Electric Churn
Electric Driers
Electric Tools
Ensilage Cutters
Fans, Cooling, Exhaust & Ventilating
Food & Meat Freezing
Pumps, All Kinds
Radiant Heaters
Radiators, Various Types for General House Heating
Ranges
Refrigeration
Refrigerators
Saws, Large & Small
Frozen Food Storage
Gasoline Pumps
Humidifiers
Huskers & Shredders
Ice Cream Freezers
Incubators
Infra-Red Heat Lamp
Insecticide Sprayer
Insect Traps
Irrigation Pumps
Kitchen Power Units
Lamps, Incandescent
Lamps, Portable
Lighting Fixtures
Milk Cooling
Milk Warmers
Milking Machines
Portable Motors
Space Heaters
Stokers
Sun Lamps
Table Stoves
Tank Heaters
Tool Grinding
Water Heaters
Water Systems

Cement and Concrete on the Farm

Approaches
Bins
Cattle Guards
Cess Pools
Circular Brick Cistern
Concrete Cistern
Concrete Cistern Filter
Concrete Floors and Foundations for
  Barns
  Cattle Pens
  Corn Cribs
  Hog Houses
  Milk Houses
  Poultry Houses
  Storage
Concrete Manure Pit
Concrete Milk Cooling Tank
Concrete Storage Tank
Concrete Stock Tanks
Concrete Wallowing Pools
Culverts
Drain Tile
Driveways
Feeding Floors
Fence Posts
French Silos
Hog Wallows
Ice Houses
Manure Pits
Masonry Smoke House
Septic Tanks
Silos
Tanks
Terraces

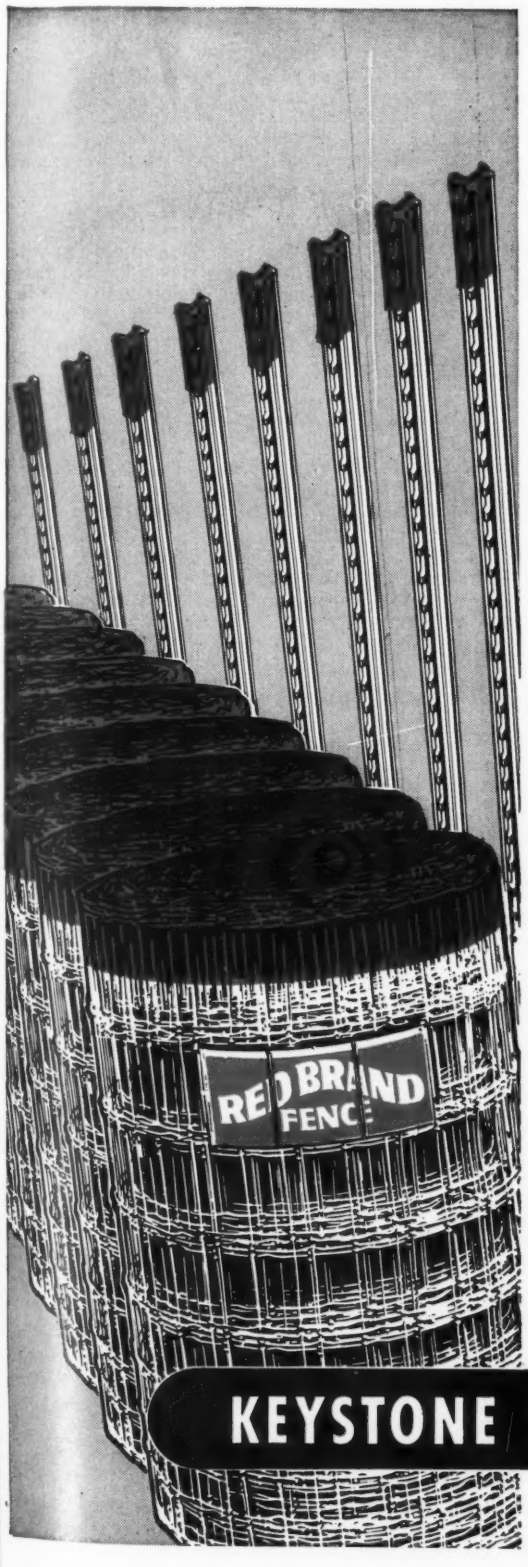
Paint on the Farm—See Paint Section

Repairs and Improvements to the Farmstead

Add New Rooms
Bathroom Remodeling
Finish Attic
Fireplaces
Fix Crumbling Foundations
Garden Equipment
Glass Enclosed Porches
Install Electrical Fixtures
Install Electrical Wiring
Install Heating System
Install Plumbing
Insulation (all animal housing)
Insulate Farm Home
Kitchen Remodeling
Landscaping
Lawn Furniture
Making Cellars Dry
New Garage
New Hardwood Floors
New Roofs (all buildings)
New Side Walls
Oil Burners
Painting
Picket Fences
Ratproofing
Redecorate
Screened Porches
Screens
Sewage Disposal Plant
Stokers
Storm Windows
Termite Treatment
Weatherstripping

RED BRAND

your foremost farm line



Today, more than ever before, rural dealers are capitalizing on the long-established customer acceptance of the entire Keystone farm fence line.

Your farmer-customers know that Red Brand with the Red Top Wire identifies the only farm fence that is *"Galvannealed" for extra special protection against the ravages of rust and weather deterioration.

When you sell the Keystone line you are handling America's favorites—long-lasting Red Brand fence and Red Top steel posts—the farm fence products that are backed by a continued national advertising program, directed at your own place of business.

Here is the complete Keystone line—your *Foremost Farm* line:

- **Red Brand Fence • Red Top Steel Posts**
- **Red Brand Barbed Wire**
- **Keystone Poultry Fence and Netting**
- **Keystone Non-Climbable Fence**
- **Keymesh Reinforcing for Stucco, Overcoating and Plastering**
- **Keystone Nails • Bale Ties • Steel Farm Gates**

***"Galvannealing".** An exclusive process for coating wire used in making Red Brand fence. It is a specially heat-treated zinc coating which forms a protective zinc alloy surrounding the steel wire.

KEYSTONE STEEL & WIRE COMPANY

Peoria 7, Illinois

Farm Operating Equipment (Mechanical)

Conveyors
Corn Pickers
Corn Shellers
Deep Freeze Units
Dirt Moving Tools
Dusters
Electric Water Systems
Home Lighting Plants
Individual Electric Plants
Irrigation Pumping Unit
Lightning Rods
Power Pumps
Rakes
Refrigerators
Separators
Shallow Well Systems
Skids
Sprayers
Water Heaters
Water System
Windmills

SILO CAPACITIES

The number and kind of livestock kept on the farm along with feeding practices determine the size silo needed. The capacity of round, upright, silos varies according to diameter and height. Capacities of the most common sized silos are given in the following table.

Height (Feet)	Inside Diameter					
	10 feet	12 feet	14 feet	16 feet	18 feet	20 feet
	Tons	Tons	Tons	Tons	Tons	Tons
20	22.78	32.75	44.60	58.28	73.80	91.10
24	29.50	42.45	57.80	75.48	95.63	117.95
26	33.08	47.66	64.80	84.64	107.22	132.30
28	36.78	53.00	72.10	94.10	119.25	147.10
30	40.60	58.50	79.50	103.80	131.60	162.30
32		64.12	87.20	113.80	144.35	178.00
34		69.82	95.10	124.20	157.35	194.10
36			103.20	134.70	170.70	210.60
38			111.30	145.30	184.20	227.20
40			119.60	156.20	198.10	244.30
44				178.60	226.30	279.10
48				201.80	255.65	315.40

STALL MEASUREMENTS

Cow Stalls

Dimensions vary according to breeds. On the average a 3'—6" width and a 5'—0" length between the manger and the gutter are considered adequate for most farm cows. However, if pure bred dairy cattle comprise the herd, larger dimensions may be needed. The table below shows possible variations.

Breeds	Width	Length of Platform		
		Small	Medium	Large
Holstein	3'-6" to 4'-0"	4'-10"	5'- 2"	5'-8"
Shorthorn	3'-6" to 4'-0"	4'- 8"	5'- 0"	5'-6"
Ayrshire	3'-6" to 3'-8"	4'- 6"	5'- 0"	5'-6"
Guernsey	3'-4" to 3'-6"	4'- 6"	4'-10"	5'-4"
Jersey	3'-4" to 3'-6"	4'- 4"	4'- 8"	5'-0"
Heifers	2'-9" to 3'-2"	3'- 8"	3'-10"	4'-2"

Note: Although Stalls less than 3'—6" in width are shown, they should be avoided if at all possible. Neither are stalls shorter than 4'—10" very desirable.

Mangers

Vary from 24" to 32" in width. Corresponding front heights are listed below.

Width	Front Height
24"	12"
28"	18"
32"	24"

Concrete is considered the best material for cow mangers. It provides a permanent feeding trough which can be cleaned thoroughly and easily.

Gutters

Always 16" wide, no more, no less. This permits cleaning with the ordinary scoop.

Alleys

Cows facing in, feed alley 6'—0" to 8'—0"
litter alley 3'—6" to 5'—0"
Cows facing out, feed alley 3'—0" to 5'—0"
litter alley 6'—0" to 10'—0"

Horse Stalls

Width —Single stalls 5'—0"
Double stalls 8'—0"
Length —16' from front of manger to rear wall.

Caution: This dimension should never be decreased or the horses probably will kick out the side of the barn.
Partition Length—10'—0" from front of manger.
Manger —Width 2'—0".
Height to top from floor—3'—6".
Feed Box —Width 12" in the clear.
Length—width of manger.
Depth—not less than 8".
Box Stalls—12' x 12' minimum, 12' x 14' preferable.

POULTRY HOUSING

Floor Area: Approximately 2½ chicks per square foot. A 10x12 foot brooder house will shelter 300 chicks with no over-crowding.

Sun Parlor: Mesh covered panels which can be hooked together easily, provide an inexpensive open air exercise pen. If a frame covered with netting is used for the floor, sanitation is assured. On bright days with a slight wind, these exercise pens are usable, if the side panels are covered with tough building paper. Some poultry men have constructed separated panels covered with building paper or muslin and fastened them against the wire-covered panels in chilly weather.

Facing: Housing should always face south.

A 10x12 foot brooder house is needed in conjunction with a 20x20 foot laying house. To maintain a production farm flock of 100 to 125 hens, about 300 young chicks are needed each year. After the death losses and necessary cutting are subtracted, the number of pullets available for addition to the flock will balance the losses sustained by the flock.

Multiple Poultry Houses

The multiple type of poultry house is popular among large scale producers because this type of a building cuts the cost of construction, maintenance and caring for the birds.

The principal difference in this type of unit is the fact that the building is built two, three, four or five stories high. In this way foundation and roof cost are charged off to a larger number of birds.

This first cost factor is important but other advantages are as follows:

1. Low cost of maintaining roof per bird in years to come.
2. Pens are cooler in summer and warmer in winter, due to the fact that less wall and roof area are exposed to outside temperatures.
3. It is more pleasant and easier to care for the birds. All birds are under one roof, eliminating travel from one house to another, as in small units.
4. Time Saver—One man can care for two to three times as many birds as in one-story type—thus cutting expenses.

Ventilation: Ventilation in this type of unit is not difficut to handle but the flue system is different.

Construction Hints

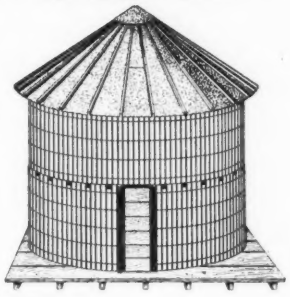
Skids: 4" x 4" x 14'. Treated material preferred.
Sills: 2" x 8" x 10' bolted to skids.
Joists: 2" x 4" x 12'—2 feet on centers.
Floor: Double—if early brooder and broiler production is planned. Shiplap on joists, building paper and then matched flooring. Single—if late brooding is planned. Should be matched flooring.
Walls: 2x4 inch studs placed 2 feet on centers. Covered with sheathing finished with flexboard. Rigid construction needed to withstand the strain of moving.
Roof: 2x4 inch rafters placed 2 feet on centers. Shiplap should be used for sheathing if prepared roofing is used. 1x4 inch boards spaced 2 inches apart if shingles are used. One foot of overhang on all sides is recommended.

VENTILATION SUGGESTIONS FOR BARNS

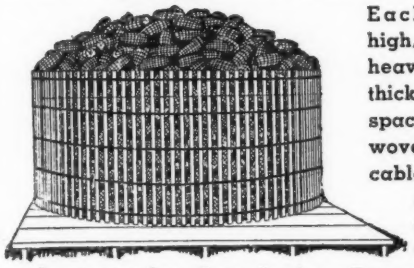
1. One of the best indications of an improperly ventilated barn is the condensation of moisture on the walls, ceilings and floors.
2. Ample ventilation is indispensable for maintaining the animal's power of disease resistance. A cow needs to be supplied with twice the weight of pure air that she does of food and water.

DENNING Grain Bin

for storage of all kinds of Small Grains



DENNING Portable Corn Crib



Each section 4' high, consisting of heavy slats ½" thick x 1½" wide, spaced 2" apart, woven between 5 cables of No. 12½ galvanized wire. Painted with red mineral preservative. Long lasting. Easy to erect. May be erected 2 sections high.

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Select A Good Book From This List

Wood Identification, Properties, Utilization . .

THIS FASCINATING LUMBER BUSINESS. By Stanley F. Horn, Editor "Southern Lumberman." A story of America's most unusual crop—her forests. The author traces the progression from growing trees to marketable timber, and also touches on a multitude of forest products—turpentine, resin, paper pulp, and plywood. Size 6x9, 328 pages. **Price, delivered, $4.00.**

PLYWOODS. The development, manufacture and application of this strategic material. Size 6x9, 373 pages, including over 100 illustrations. Fresh from the press is a new book entitled "Plywoods" which embodies complete up-to-date information about the entire process of manufacturing that product from the trees in the forest to the various types of finished commercial plywood. Many interesting applications of plywoods in housing, furniture manufacture, ship building, aircraft construction and other fields are discussed in detail. An extensive glossary of terms of the industry is included. The book is chock full of illustrations and photographs, nearly every point discussed being illustrated. Andrew Dick Wood and Thomas Gray Linn, both experienced plywood men, are the authors of this work and the preface is by Lawrence Ottinger, president of the United States Plywood Corp. Copies of "Plywoods" may be had from the AMERICAN LUMBERMAN, $4 each.

LUMBER AND ITS USES. By R. S. Kellogg. Information on the structure and physical properties of wood, its manufacture, sizes and grading, its seasoning, preservation and painting, and its construction and factory utilization are followed by chapters showing for each principal wood uses to which it is put. 378 pages, rounded edges, in leatherette cover. **Price, delivered, $4.**

THE PROPERTIES AND USES OF WOOD. By Arthur Koehler. In this book are presented in non-technical manner the more important facts concerning the properties of wood and how these properties affect its utilization. Bound in cloth, 354 pages. **Price, delivered, $4.00.**

TIMBER PRODUCTS AND INDUSTRIES. By Nelson C. Brown. The harvesting, conversion and marketing of materials other than lumber, including the principal derivatives and extractives. Emphasis is placed upon those products which provide means of converting wood formerly wasted into some useful forms. **Price delivered $4.00.**

PLYWOOD — What It Is, What It Does. By Louis H. Meyer. Covers the composition, structure, and mechanical characteristics of plywood and kindred laminates . . . provides a complete, concise picture of why, when, where and how to use plywood to best advantage. **Price delivered $3.50.**

Forestry, Tree Identification, Woods Work

LOGGING. By Nelson C. Brown. The principles and methods of harvesting timber in the United States and Canada. Coverage of methods and procedures of logging is nation wide . . . includes recently developed mechanical devices now in use. **Price delivered $5.00.**

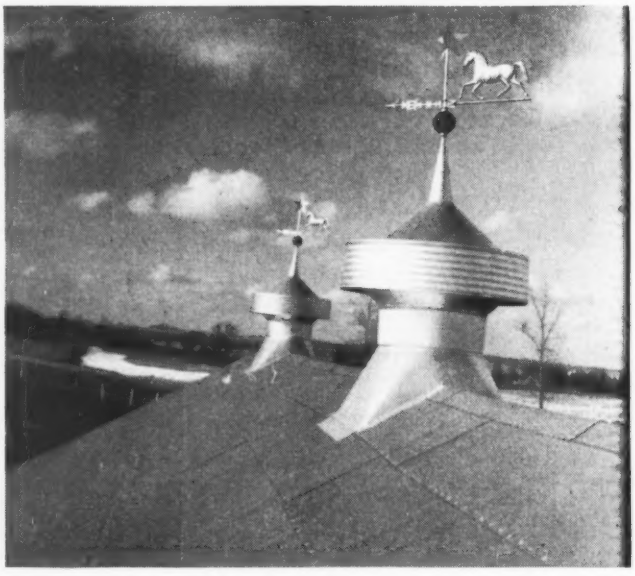
TIMBERS OF THE NEW WORLD. By Samuel J. Record and Robert W. Hess. Encyclopedia of the best information available concerning the trees and larger shrubs native to South America, Central America, Mexico, the West Indies, United States and Canada. Descriptions of the trees and woods of more than 1100 genera of 155 natural families. **Price delivered $10.00.**

WOODSMAN'S MANUAL. By Austin Cary. Deals with land surveying, forest maps, growth of timber, timber estimating and cruising, log and wood measurements — all supplemented by tables giving mathematical formulae, numerous log scales and other tables for measurement of woods products that are not found easily elsewhere. 366 pages, 6½x4¼, by about an inch thick, bound in tough waterproof cloth with flap protecting edges, and weighing only about 10 ounces. **Price, delivered, $3.25.**

Send Your Order To:

AMERICAN LUMBERMAN & BUILDING PRODUCTS MERCHANDISER

139 N. Clark St. **Chicago 2, Illinois**



BARN ventilators and lightning arrestors are two functional items of supply very closely allied with construction materials. A prospect for a new barn roof is also an excellent prospect for other supply and accessory items.

3. The essential parts of an effective ventilating system are:
   (1) The inlets for fresh air—the total sum of their area should equal or exceed by 10% the area of the outlets.
   (2) The outlets for foul air—these should be so constructed that their sides are air-tight and afford complete insulation so that air within flue will not be cooled too rapidly.
   (3) The aerator on top of the barn—so constructed that the action of the wind exerts a suction on the air in the outlet flue.
4. Rate of supply of air to barns to provide pure air for classes of livestock.

	Cu. Ft. per Head Per Hour
Horses	4924
Cows	3958
Hogs	1510
Sheep	929
Hens	37

5. The following amount of out-take flues required to keep the air in the building sufficiently pure for livestock.

	Head
Horses—1 sq. ft. cross-sectional area for	5
Cattle —1 sq. ft. cross-sectional area for	5
Hogs —1 sq. ft. cross-sectional area for	18
Sheep —1 sq. ft. cross-sectional area for	24
Hens —1 sq. ft. cross-sectional area for	400

INSULATION ON THE FARM

Send for Farm Building Insulation—Insulating Board Institute, 111 W. Washington St., Chicago 2, Ill.

Send for Insulation on the Farm—U. S. Department of Commerce, Washington, D. C.

Send for Rock Wool on the Farm—Mineral Wool Association, New York.

The farmer of today is no different from the city dweller when it comes to home comfort. He too, wants a house that is easy to heat and one that will be cool during hot summer nights. Insulation is more important to the farmer in winter than to the city fellow, because only 14 percent of the farms in our nation have central heat. This means that the farmer must fire many stoves throughout the house to keep warm.

In summer a cool house is a blessing after riding the hot tractor in the blazing sun from dawn to dusk. With a seven day week and such long hours, rest and comfort are more important than anything else for the farmer's few leisure hours.

Remember that the farmer knows the value of insulation better than most customers as he uses so much of it in his producing and storage buildings. Because of this it is easier to sell the farmer a complete job than almost any of your other customers. This is especially true today, when less other merchandise is available and he has more money than usual to spend.

Batt, blanket, blown, board, reflective or fill types of insulation can be used in farm homes.

FARM INSULATION CHECK CHART

House: Insulate top ceiling. Blow sidewalls of frame houses. Decorative board for inside walls and ceilings.

Pump House: Insulate sidewalls and ceilings by placing insulation in studs and rafter spaces. Wrap exposed lines with pipe insulation.

Poultry House: Insulate sidewalls and ceilings, using board insulation, never under 25/32 inch.

Machine Shed: Insulate walls and ceilings of workshop only.

Beef Cattle Barn: Normally needs no insulation.

Dairy Barn: Insulate sidewalls and ceiling even if hay is stored overhead. Vapor sealing and ventilation important.

Milk House: Insulate sidewalls and ceilings for workers' comfort and to protect plumbing. Insulate cooling tank and be sure insulation is set in hot asphalt.

Hog House: Insulate sidewalls and ceilings. Vapor seal over all insulation is essential, as paper on insulation is often not enough.

Potato and Fruit Storage: Insulate sidewalls and ceilings. Vapor seal very essential.

SELLING TIPS AND HELPS FOR THE SALESMAN

Time was when the farmer, his neighbors and available rough carpenters did most of the construction on farms. The farmer bought building materials rather than "packages" and sales were made on a per piece or per thousand basis.

Two factors have brought about a gradual change: (a) the farm today is more diversified and the farmer has less time for construction work himself than formerly, and (b) the income of the farmer has grown to the point where he can contract for the complete building the same as big city neighbors.

If his company does not have a farm library available, the farm building products salesman should start one of his own and have on file for study and reference:

The farm journals read by your customers.

Farm Construction publications of the U. S. Department of Agriculture.

Farm Construction publications of his State University.

Explanatory booklets of manufacturers, especially lumber, steel, asbestos, aluminum, copper, insulating board, insulation, cement, clay products, etc.

Literature of Farm Machinery and Equipment Manufacturers.

Farm Construction manuals of all building industry associations.

Get on the mailing list of people who issue farm bulletins regularly.

The salesman will find it greatly helpful frequently to contact and consult with:

His County Agent.
Personnel of State Agricultural College.
U. S. Department of Agriculture.
Farm Engineers and Specialists in Manufacturing Companies and Associations.
Insurance Adjusters and Agents.
Farm Real Estate Companies.
Farmer's Clubs and Organizations.
4-H Clubs.
Banks and Loan Agencies.
Rural Electrification Personnel and Government Inspectors.
Veterinarians.
Farm Women's Organizations.
Extension Service and Experimental Stations.

The salesman should acquaint himself with every available type and source of consumer sales financing for his farm trade. In spite of the farmer's strong cash position, it often helps the sale to discuss it in terms of monthly, quarterly or crop payment schedules.

Section 14

Lawn and Garden Equipment

SUPPLIES FOR the lawn and garden are being regarded with increasing favor by the retail building products dealer, and a high percentage throughout the country have added a representative line of these items with highly satisfactory results.

There are several reasons why these products may well be supplied by the building material dealer. First, there is the matter of convenience to the customer. Many dealers are located in, or adjacent to residential districts, and are the nearest place where these items may be obtained.

A marked decentralization of business in urban communities has been noted in recent years, and the merchant whose location is away from congested areas and near to the residential district, has a marked advantage over downtown merchants in almost every branch of consumer merchandise.

Second, with a high percentage of business operating on a five-day week, the home owner has an extra day to devote to gardening and home improvement. Many dealers have reported that their Saturday consumer traffic is many times greater than any other day of the week.

Most of the lawn and garden items are definitely seasonal. Flower and lawn seeds are largely sold in the spring but the latter are also planted in the fall. Fertilizers and lawn foods are also most heavily applied in the spring, but there is a considerable demand for them all through the summer and early autumn months.

The market for garden tools, lawn furniture, and other outdoor fixtures and accessories follows the same pattern; a definitely heavier sales season in the spring, but with a satisfactory demand throughout the warm months of the year.

The dealer's merchandising program must be planned accordingly with the heaviest sales effort being devoted at the peak periods of demand, using newspaper advertising, store display, and suggestive selling methods to promote maximum volume.

Seasonal displays sell exceptionally well if placed immediately inside the front door of a store or close to the sales counter where the customers may examine the merchandise while waiting to be served. Seasonal products displayed in a remote spot in the store will not produce spontaneous sales.

An attractive display of yard and garden merchandise on the outside of the store is also a successful way to draw customers and many dealers use this method in varying degrees with highly satisfactory results. When the season is over for the sale of these items, the dealer may relegate them to a less important spot in the store or warehuse until the next selling season arrives.

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Garden Equipment and Furniture	404
Grass and Flower Seeds, Bulbs, Etc.	404

LAWN AND GARDEN TOOLS AND MACHINERY

If you will make a survey this fall of the number and location of garden plots in your retailing area, you can quickly determine a part of your potential for the sale of garden tools and machinery. Lawn mowers wear out and hose and rakes are constantly being broken and lost. The replacement market is a good one, and then there is always the man who wants to start a garden and needs full equipment. The dealer who carries an adequate stock of this type of equipment is performing a real service for the community.

Some suggested sales items include:

Cultivators
Dandelion diggers
Dandelion rakes
Dusters
Fertilizer spreaders
Flexible rakes
Forks
Garden trowel
Grass shears
Grass slicers
Power gardeners
Power mowers
Pruners
Rakes
Railroad picks
Seeders
Self-cleaning rakes
Spades
Spading forks
Sprayers

Hand mowers
Hedge shears
Hoes
Hose racks
Hose reels
Hose couplings
Hose nozzles
Lawn barrows
Lawn rollers
Oilers
Spreaders
Sprinklers
Transplanting trowel
Turf edgers
Weed diggers
Weeder
Weed pullers
Wheel barrows
Yard lights

FENCES, GATES AND WALKS

If competition hasn't gotten a head start on this profitable sub-department, here is a merchandising opportunity that can pay important dividends for the dealer who will aggressively tackle this market.

During and since the war there has been a universal let-down in the upkeep of fences, walks and driveways. There are many reasons for this, including the scarcity of material, the scarcity of labor, and the lack of dealer manpower to develop specialty sales of this type.

However, some dealers have demonstrated that the business is there to be had if given the proper attention. One dealer sold $20,000 worth of wooden fences in a single year recently.

Items to be merchandised in this sub-department include:

Board fences
Board gothic fences
Cedar posts
Cedar rails
Hand split fences
Lattice fences
Lock-weave fences
Wood fencing
Wire fencing
Picket fencing
Pergolas
Post hole augers
Post hole diggers
Rustic
Round top stockage fences
Trellis

OUTDOOR FIREPLACES, BROILERS AND EQUIPMENT

Each year sees more outdoor cooking in America. The male of the species seem to take a special pride in demonstrating his steak broiling prowess and other culinary techniques, but he wants to do it outdoors where he has plenty of elbow room.

A well built and well equipped outdoor fireplace has many items that mean sales and profits for the dealer, including:

Barbecue pits
Camp stoves
Folding seats
Forks
Grilles
Steak broilers
Outdoor stoves
Ovens
Picnic jugs
Picnic kits
Seats
Tables

GREENHOUSES, HOTHOUSES AND EQUIPMENT

Small greenhouses and hothouses to get vegetable and flower gardens started early have a special appeal now that home owners have increasing spare time. Not the least of the selling points for these items is the shortage of green food stuffs and the money saved by growing your own.

Sales items in this sub-department include:

Cold frames
Hot bed sash
Hail-proof glass
Thermometers
Weather instruments

SELL DENNING ORNAMENTAL
PICKET FENCE

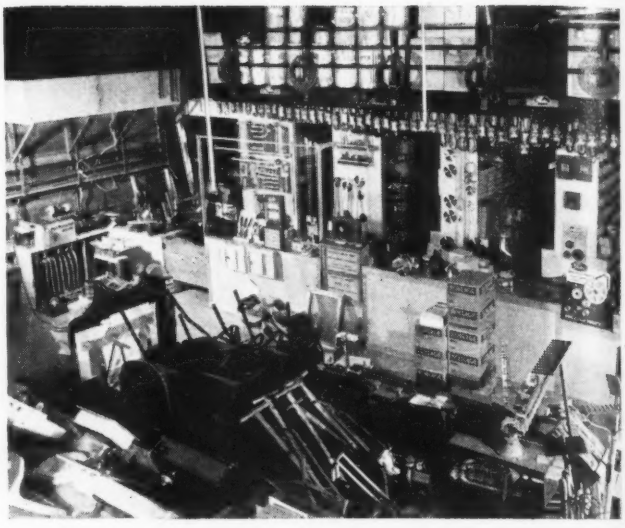
White with
Surfaced Pickets
for **Residential** Purposes

Red for Gardens,
Chicken Yards, etc.

Write for prices and catalog.

ILLINOIS WIRE & MFG. CO.
P.O. Box 1396, JOLIET, ILL.

TEXAS FENCE CO.
Rt. 10, Box 388
Dallas, Tex.



THIS is a unique lawn and garden tool arrangement in a section of a double-deck lumber shed that has been converted to sales area.

BICYCLES, sporting goods, and other outdoor play equipment are good consumer items for the dealer who wants to develop this type of business.

LAWN SEED and soil foods make an attractive "bulk" display, and are in constant demand. These are excellent profit items for the building products and home supply dealer.

Section 15

Garage Doors and Package Sales Items

THE TERM "package selling" has become more and more prevalent in the building products field in recent years. It is not a new idea of merchandising. Most dealers have practiced it in varying degrees for a long time; for as a method of service it means the supply of materials in the form that the customer will use it.

Some items that are classified as package products require no fabrication or application by the dealer. Others involve the installation of a variety of the products that the dealer carries in order to provide the customer with a complete project in usable form.

Proof that the package selling method fits the consumer demand is borne out by the fact that thousands of specialized applicators have sprung up all over the country who sell such items as roofing, siding, insulation, screen and storm sash, kitchen and bath remodeling, decorating, garage doors, and many others.

These applicators are direct competitors of the building products dealer. They have developed and supplied a tremendous market, and the materials going into these jobs are subtracted from the volume that could have been the dealer's, had the customer been able to get the same service from him.

Far-thinking dealers are giving serious study to the problem of providing package service for the materials they handle both in the new construction and the remodeling and maintenance fields; for the current trend clearly indicates that the mere supply of materials is becoming less and less a necessary function in the building products industry.

On the other hand, the dealer who adapts his operations to provide package service to his customers, both contractor-builders and consumers, will establish himself as an indispensable factor in his trading area, and contribute substantially to the more efficient and economical supply of building products in their complete, usable form.

Essentially, all this implies is for the dealer to develop a means of fabricating, applying, or installing certain materials that he handles, either with his own personnel or in cooperation with sub-contractors, and to provide a financing service that permits the customer to distribute payment over a period of time.

A brief summary of some of the types of package service that the dealer can logically and profitably provide are listed below.

SALES ITEMS

We have carefully selected a number of specialty sales items that many dealers are promoting successfully. Each of these which meets the above six requirements within individual markets should be given careful consideration by the dealer for its additional sales and profit opportunities.

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Shower Cabinets 408

Garages, Garage Doors and Equipment.

One garage door manufacturer recently sold his one hundred thousandth metal door. This indicates the size of this market. There are now more than 28 million motor vehicles operating. Each of these should be adequately housed. The garage replacement market has had little attention in the war years. There are years of good business ahead in this field.

Supply items include: garage doors of wood and metal; garage door hardware; folding door hardware; overhead door hardware; sliding door hardware; electric door controls.

Manufacturers of unit-doors have developed many effective ways to demonstrate their products; most of them true-to-life installations that permit the demonstration of the door's operation as well as its physical appearance.

While these items are not expensive, sales volume can be substantially increased if the dealer advertises and sells them on a deferred payment basis.

15 . . . Package Sales Items

During the past few years, thousands of new homes have been built without garages. This was done to provide housing that a family could afford to pay; also to conserve critical materials at the time when the greatest need was for houses.

As a result, there will be a large market for garages in the coming years, and each one offers the dealer a potential customer for a modern unit-type garage door, in addition to the other materials necessary for its construction.

There also exists a substantial replacement market in the garage door field to provide modern, efficient doors in place of obsolete and worn out ones that have outlived their service.

This type of business can be stimulated and maintained by active merchandising practices, advertising, store demonstration, and direct selling.

Screens, Storm Windows, Venetian Blinds.

The chances are that in the average dealers' market these items have been neglected promotion-wise. The specialty salesman offering an **installed** service is welcome at most doors. Weatherstripping is an excellent companion item.

For supply items see Millwork Section.

Insulation—Roofing, Siding, Caulking.

If aggressive specialty selling organizations are not at work or have not recently covered the market, the dealer will find this field especially productive, manufacturers' competition is now at the point where valuable franchises are available to aggressive specialty selling dealers.

For supply items see Roofing Section.

Paint, Wall Paper, Window Valances.

Dealers who sell and apply paint report 400 percent more actual net profit from the paint department than under materials-only sales. This is a steady repeat business that lends itself beautifully to time payment selling.

Many dealers have developed a very satisfactory system of providing home decorating service in cooperation with a local painting and decorating contractor, thus carrying out the package sales program without the necessity of keeping workmen on their own payroll.

See Paint and Wallpaper Section for supply items.

Store Fronts, Plate Glass, etc.

Modernization of main street is the order of the day in many cities. This can be promoted to great profit by the wide awake dealer. In many markets the reason more store fronts are not sold is because **no one is asking for the business.** Many related sales and much additional volume for other departments will accrue to the dealer who promotes this market.

Termite Controls and Wood Preservatives.

Here is a growing business in areas where insects, fungi, and bacteria attack wood. A natural for the lumber dealer—but important volume can only be secured through creative selling.

See Lumber Section.

Stained Shingle, Side Walls.

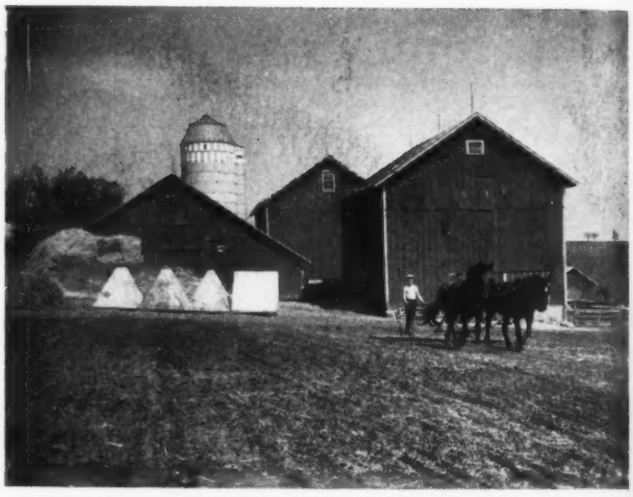
Experts say that the important volume in Red Cedar shingles will be in sidewalls. Double-coursing with second grade shingles underneath give a beautiful shadow line and economy simultaneously.

Unpainted Furniture.

If no one in the market is offering these items many a profitable sale may be had by creatively combing this territory.

This particularly applies to kitchen, bath, and corner cabinets, and similar built-in equipment. The trend in new construction toward living-dining room combinations has increased the market for breakfast nook facilities in the kitchen; and the need for maximum space utilization presents an added demand for compact, efficient built-in equipment.

Remodeled homes also offer a source of business in this field, but as is true with most of the items listed on these pages, it is most satisfactorily promoted by active merchandising methods.



ON THE FARM, package sales items run the full range from small yard fabricated buildings to completely equipped barns. The market for new or improved farm homes, buildings, and equipment is tremendous, indicating a steady source of business for years to come.

Log Cabins, Lake Cottages, Cabanas and Tourist Rooms.

A specially good item for a dealer in or near a resort area. Many of these can be pre-fabricated in the yard during off seasons and delivered to the site ready for use.

Enclosed Porches.

Many applicators in city markets are doing a good business on this single item. Dealers can offer in conjunction a porch, driveway, and walks repair service.

Waste Space Utilization.

Here is another item that could be a business in itself. Nearly every house over 20 years old—there are millions of them—has unused space in attic or basement that could be converted into living or recreational quarters. Additional rooms secured through the conversion of unused space can be had at 20 percent of the cost per room in a new house.

Kitchen, Bathroom and Laundry Remodelling Jobs.

See Kitchen, Laundry and Bathroom Section.

Air Conditioning and Commercial Refrigeration.

A new and almost centered specialty in lumber yards—but one with a consumer demand already built for it. Theatres, stores, etc., with air conditioning have made the public want it. Commercial refrigeration makes an excellent companion promotion.

Asphalt Tile Flooring.

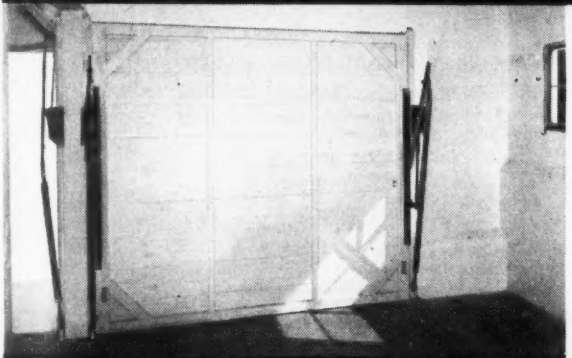
In metropolitan areas specialty contractors have a profitable business in this item alone. If the dealers

INCREASE YOUR SALES WITH TAVART OVERHEAD DOOR HARDWARE

IT'S ALL ON THE JAMB
NO WEIGHTS
NO PULLEYS
NO TRACKS
NO CABLES

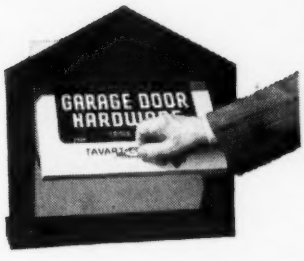
Tavart saves space, leaves all useable room available. One man can install in less than one hour with simple hand tools. Saves time, money. Built to last.

Tavart hardware is steel throughout with roller-bearing action.



Tavart is available for single doors (above) or double doors (upper right) 8′ to 16′ wide, 7′ high. Overhead clearance 8″. Models for doors up to 10′ high. Special sizes available.

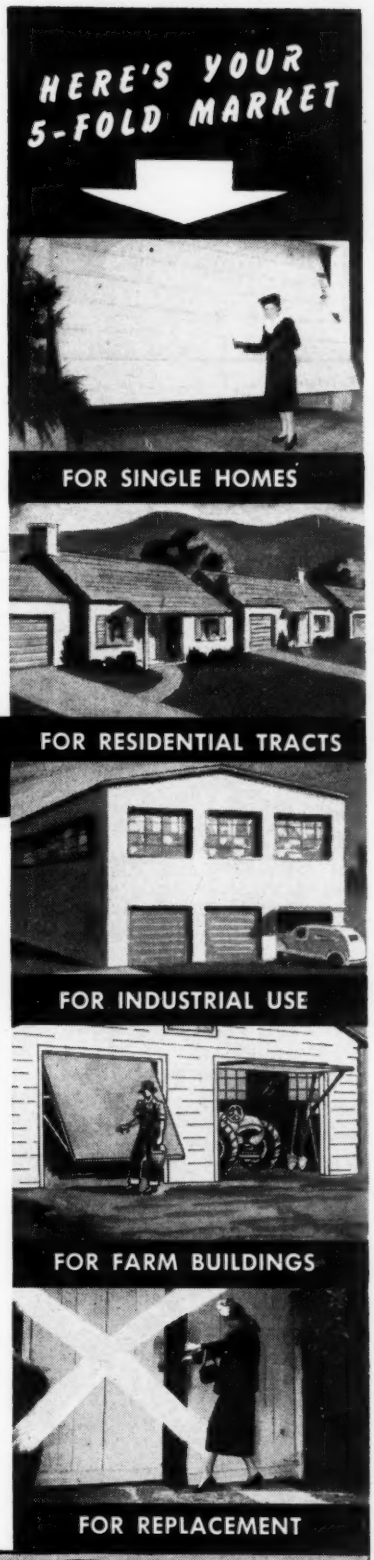
Each set of Tavart comes factory assembled, lubricated, and packed in labeled carton ready for installation. Handle, lock included.



THIS FREE MODEL SELLS FOR YOU!

Dealers get this free scale-model with their first order of Tavart. When customers lift the handle they see the easy-up action and design simplicity. Tavart sells itself!

For further information, ask your Hardware Jobber . . . or write to Tavart.



TAVART 49'ER

The 49'er Model

RUGGEDLY BUILT . . . EASY ON THE DRAW

TAVART COMPANY • PARAMOUNT, CALIF.

PIONEER OF JAMB-TYPE HARDWARE

SAY TAY' VART

TAVART

REG. U. S. PAT. OFF.

15 . . . Package Sales Items

PACKAGE selling as it applies to the home also embraces a wide range of services from the application of insulating siding to the outside of an old home, to providing all of the built-in and accessory equipment for the inside.

market is not serviced he should look into this. It is a coming business in lumber yards. The same dealer salesman could sell hardwood, linoleum and all other types of flooring.

Acoustical Treatments.

Like flooring this is a profitable business for specialty applicators in densely populated areas. In smaller towns the dealers may find it a profit builder.

LIGHTNING PROTECTION SYSTEMS: Lightning is one of the greatest causes of farm fires, and the installation of adequate protection systems on farm homes and buildings is essential. Since such assemblies are incorporated on a structure, and the majority of customers regard them as part of the structure, lightning protective systems are a logical item for the rural dealer particularly to sell.

But the need for such systems is not limited to the farm. Urban homes and trees may also be provided with the same protection, to prevent needless destruction by lightning.

Considerable improvement has been made in present day systems over the old, familiar lightning rod. Modern, thoroughly effective systems are now made that are practically invisible. Aluminum, because of its excellent electrical conductivity, and its inherent ability to resist corrosion, has become very popular as a metal for the fabrication of lightning protective systems.

As is true with many other package products now distributed through building products dealers, however, the volume of business developed and the profits derived, depends on the promotional effort devoted to them. Lightning protection systems are one of the easiest lines to sell, particularly if they are handled as a promotional item.

Hardwood, Plywood, Veneer and Hardwoods.

An item that goes well with the promotion of home work shops. With ever increasing leisure American families are constantly on the lookout for pleasurable and profitable ways to use their spare time. Light industries, farms, schools and institutions are good prospects too!

Rustic and Decorative Fences.

Some dealers have found this an extremely profitable item, almost a department in itself. One dealer sold $20,000 volume on this item alone in a single year! It goes nicely with Lawn and Garden items, driveway and walk improvements, repairs, etc.

Incinerators, Fire Extinguishers, Wall Safes

The abler type of specialty salesman has been able to make a living on most of these items for years. The dealer who uncovers how his customers supply their needs for above may find they are not supplied—and if not why not sell them?

Water Softeners.

One dealer who operates a lumber yard, filling station and coal business reports that he made more money in 1946 on water softeners than any of the other three. If you are in a hard water area this might be worth looking into.

Sanitation Chemicals and Sewage Treatments.

Here is a badly needed consumer service that is both badly needed and not adequately covered in many markets. A Real Opportunity!

Floor Renewals.

A complete Floor Service could be sold as a specialty item—Floor sanding and polishing, floor coverings, asphalt tile, pre-finished hardwood flooring, linoleum, etc.

Attic Expansion and Ventilation.

Many attics provide space for an extra bedroom or two, a playroom or studio. This item can be combined with attic ventilation and insulation in a specialty sale.

Timber Connectors.

Every year there is increased utilization of the ingenious aids to heavy construction. Dealers with market needs in the areas of roof trusses, bridges and heavy construction, poles, cross arms, glued construction and prefabricated housing should write Timber Engineering Company, 1319 Eighteenth Street, Washington, D. C., for data covering this field.

Indoor and Outdoor Fireplaces.

Through manufacturers' research in recent years, successful fireplaces are an exact science. Dealers can approach the market on a specialty basis with complete confidence in adequate producers' support.

Recreation Rooms, Play Quarters and Refreshment Bars.

Every home with a dry unused basement space is a potential for this type of specialty sale—An extra profitable item for winter time sales.

Adhesives.

The progress in glues and adhesives in recent years has been so marked that it is almost possible to bind any material to another in such a manner that the combined unit is stronger than either. The forward-thinking dealer will be the local adhesive specialist.

Asbestos, Asphalt and Aluminum Sidewalls.

The coverage of this market is a must for the dealer who wishes to adequately protect his competitive area. See Roofing and Siding Section.

Frozen Food Lockers.

This item might be treated as a selling specialty itself if the local opportunity is not being completely covered—or it may be combined with appliance, air conditioning and refrigeration sales.

Knotty-Pine, Hardwood and Redwood Paneling.

The demand for charm and beauty in interior walls make these items a profit opportunity. With the return of supplies to this field the dealer should check this potential.

Shelf Units, Radiator Covers, Expansible Cabinet Units.

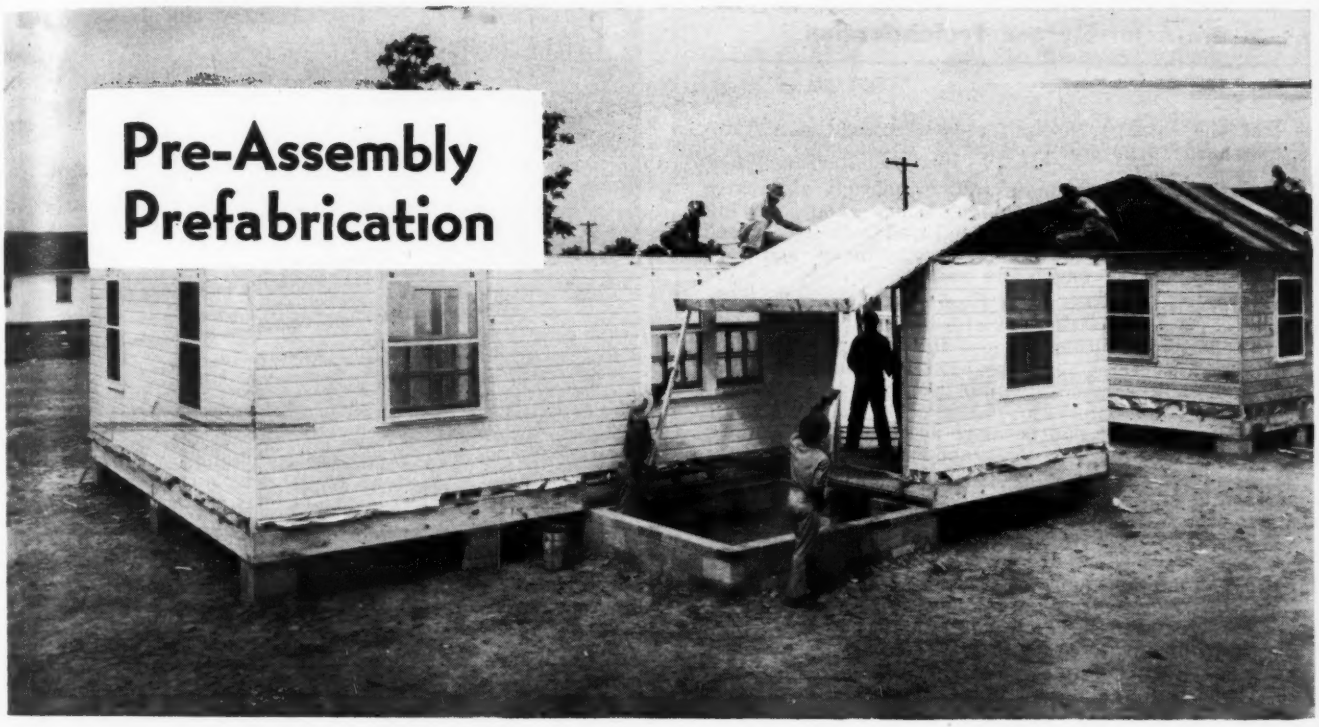
Lumber and wood working producers are refining these products more every year. These refinements often provide exceptional specialty selling opportunities to dealers.

Shower Cabinets and Wall Tile of Enameled Wood, Asbestos, Plaster, Metal and Clay.

This is typical of the possible combinations in specialty selling.

Specialty selling is package selling—wrapping up the labor and materials in the project and delivering a completed unit to the customer ready for use.

Summarizing, the opportunity for specialty selling is wide open in small, medium and metropolitan marketing areas. The dealer may cut his "line" and "staff" to his individual potential.



Pre-Assembly Prefabrication

Section 16

NEITHER PREFABRICATION nor pre-assembly are new to the construction industry. Both have been practiced for a number of years without having made a serious impression on the construction field. But in the past few years both have enjoyed a tremendous advancement; have proved their merits; and have given ample evidence that they are growing factors in the industry. It is quite possible that they forecast technological and procedural methods that will exert a powerful influence on the construction industry as a whole.

The present-day building products dealer can not overlook these strong influences in the field. Certain trends today, particularly in the realm of pre-assembly, strongly indicate that the dealer will be moved to supply an additional service in his trading area; that of supplying sub-assembly units of a house or similar structure. This procedure has already clearly proved its soundness. Operative builders have employed job-site shops to fabricate house sections with amazing savings in man hours. In addition, shop assembly has proved that the work produced is more accurately assembled and of better all-round quality.

PREFABRICATION

The term prefabrication has been applied to structures that are largely fabricated in a factory. This is usually done by sub-assemblies, so that shipment of all components can be handled efficiently and compactly. These units are accurately made, and require only to be set in position and secured. As a result, the job-site assembly time is very short, and many prefabricated houses can be completely assembled ready for occupancy in a day's time or less.

Many prefabricated homes on the market today are not radically different in design from conventional construction. Others, however, are departing drastically from conventional, both in materials and methods, according to systems that have been developed by the manufacturers' research and engineering departments. Most of these however, have not been in actual service for a sufficient length of time to accurately determine their performance abilities.

Advantages of Prefabrication:

Prefabricators list the following points about prefabricated houses that will be of interest to dealers:

1. Prefabrication allows stronger construction with less materials by the application of sound engineering principles (plywood when bonded to well-dried, light weight studs, can produce a wall section that is more resistant to wind infiltration, has a higher insulation value, is of lighter weight, uses 50 percent less material and is stronger than the convention wall section).

2. Continuous bonding of materials with synthetic resin glues has produced joints in prefabricated structures stronger than the materials they bond.

3. Synthetic-faced boards are being used that combine structural features with a vapor barrier and a finished surface.

4. Savings are made in the prefabricated house by considering the home as a complete living unit. Instead of a builder who relies upon the heating contractor, plumber and electrician for guidance that is often warped to their own advantage, the house that is conceived by the architect and engineer as a complete unit is more likely to be adequately built and less likely to be over built.

5. When materials for prefabricated construction are assembled on jig tables of convenient height into structural sections, output is greater than when workers are stooping one minute and climbing scaffolding the next. Greater accuracy results because each framing member must fit into the jig. While the sections are in a horizontal position, building paper or insulation is conveniently applied and electric conduits installed.

6. Pre-fit doors are quickly set into the wall sections and, in some instances, siding or shingles are factory applied.

7. Erection time is shorter for the prefabricated house and many building details are eliminated. The result is:
   (a) the dealer-erector can concentrate on volume building and aggressive merchandising.
   (b) a savings in interest on the investment (a $9,000 house finished in one month instead of three means a savings of $60 in interest alone, to say nothing

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of the savings through reduced overhead and increased turnover).

(c) getting the house under roof in one day eliminates shrinkage cracks, swollen doors and flooring squeaks which in conventional buildings are caused by the long exposure of lumber, window and door frames to the snow and rain.

8. Builders of houses made from prefabricated panels are almost free of the sharp winter slump which in some regions reduces operations almost 100 percent. The far-sighted dealer-erector can prepare sufficient building foundations in advance of winter weather.

9. Costs and prices can be more accurately determined in advance because the builder knows the precise costs of the panels and equipment for a basic house and has an accurate schedule of prices for additional items, such as garages, breezeways, porches, dormers, etc.

10. A builder using prefabricated sections can concentrate on the development of land and the erection of houses without the constant worry and expense of getting the required mechanics on the job in their particular turn, having to order in excess of actual material requirements to avoid work stoppages, and placing valuable materials on the site unprotected from vandalism.

11. The name and reputation of a responsible manufacturer, as well as the Prefabricated Home Manufacturers institute (in the case of its members) stands back of the prefabricated house built by a dealer-erector. Houses of all responsible producers meet FHA mortgage loan requirements.

PRE-ASSEMBLY

Pre-assembly has many features similar to prefabrication in that it involves the shop fabrication of all house sub-assemblies that can more efficiently and more economically be pre-built by such methods. In many respects, however, it is a system that has far more appeal to the retail building products dealer as it involves conventional construction methods, and can be fitted quite easily into the dealer's normal operations and services.

There is no question that the next few years will witness rapid developments in the field of pre-assembly. The public of the country has been thoroughly convinced that conventional on-site construction is too costly at the current labor rates, and there is nothing to indicate that these will be materially reduced.

Contractors and builders of large projects have proved that pre-assembly practices on the job-site of multi-unit projects has resulted in substantial labor savings. Experiments with the Industry Engineered House have indicated that the same savings may be effected by small contractors, if the dealer will provide the sub-assemblies.

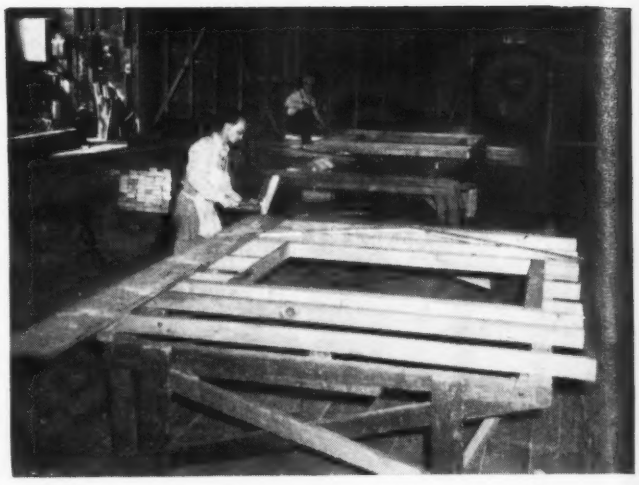
Before pre-assembly methods can be generally adopted, however, the unions, contractors, architects, and dealers must all endorse and practice them. It would be foolhardy to believe that this can be accomplished in a short time, but there are influences that might force the issue more quickly than most would expect.

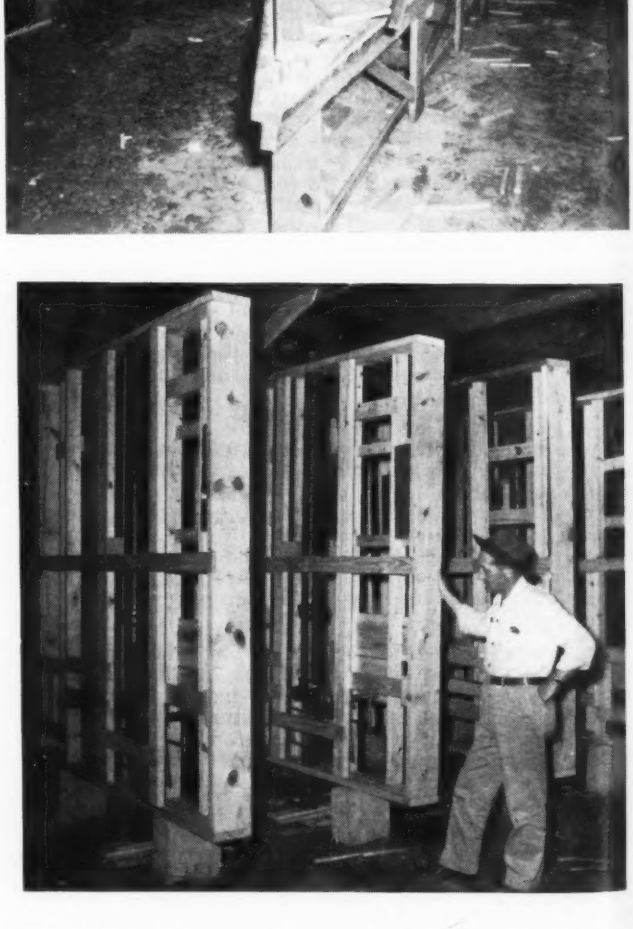
On a competitive market, builders who are able to construct homes of high quality for less money will get the business. Those who stay in business will be the ones who are able to keep labor man-hours at the lowest point, and pre-assembly offers that potential.

Also, experience has shown that a highly competitive market in the building field reduces the total number of units constructed by each builder. Rather than project-developments, building is scattered, and a job-site fabrication shop would not be practical.

By a logical sequence, either the building material dealer assumes the service of supplying house sub-assemblies, or the builder puts one in for himself at a central point. It is only a short step from this point into the material business, as many dealers, particularly in the large metropolitan areas found out in recent years.

Another factor that may hasten the application of every





***PRE-CUTTING** and pre-assemly practices make possible the same efficiencies as prefabrication, but places the manufacture of house sub-assemblies with the building material dealer as a service to his contractor customers.*

efficiency possible is the government's attitude toward the industry, and the powers that it can easily invoke to by-pass the existing segments of the industry to provide housing. Few would agree that this could possibly bring about actual efficiencies, but it would nevertheless completely disrupt the construction and supply branches of the industry.

PRE-ASSEMBLY IS SIMPLE

A dealer who entertains the idea of offering pre-assembled house sections is not letting himself in for a radical or expensive departure from his present services. It is quite simple, and if the service is merchandised the same as the others he offers, it can be of considerable advantage.

Rafter and wall-framing jigs are easy to set-up. Even a wide variation in one job to another can be provided for in a few hours at the most.

An adequately sized room is all that is necessary, and a large percentage of dealers have such space available at the present time. Jig tables are quickly and cheaply constructed, and a multi-use power saw is the primary tool necessary.

Thus, for a few hundred dollars at the most, a dealer can equip himself to do a pre-assembly job for his contractor customers. The shop can be as large or as small as is necessary to supply the area; and due to the small investment, be profitable in all cases. (See Sections covering Machinery and Equipment, also Power and Hand Tools.)

MODULAR COORDINATION

One of the most important technological innovations of recent years has been the promotion of the modular system of coordination of design in the light construction field.

The modular system is not new, having been introduced a number of years ago. Until the development of the Industry Engineered House, however, at which time the entire industry took an active interest in modular coordination, it had not been widely adopted.

This system is based on a 4 inch module that is used by the designer in planning a structure. This unit was adopted because it was found that a majority of all building materials was supplied in measurements that were an even multiple of 4 inches. Many other manufacturers have recently altered their products to conform to this module, so it is possible to build a house today that is completely modulated.

It was also found that when the overall structure dimensions were confined to multiples of 4 feet, that further savings in materials and construction time could be effected.

In the many studies that have been made with the I-E house, it has been found that a combination of the modular system of design together with pre-assembly and other time-saving methods of construction have resulted in a saving of as much as 20% in the total cost of a house. A complete and interesting survey of these methods can be obtained from the Small Homes Council of the University of Illinois, Champaign, Ill.

YARD FABRICATION FARM BUILDINGS

To many dealers in rural areas, pre-assembly and prefabrication practices have long been a part of their business. They found that there was an important market among their farmer customers for prefabricated small farm buildings such as brooder and hog houses, etc.

The assembly of these structures, the same as for pre-assembled house sections, requires little in the way of space and equipment, and can be carried out profitably on either a large or small scale.

Dealers who are considering entering this activity as a part of their operations may obtain excellent plans of all types of small farm buildings from their state agricultural college.

LOOK!

GBH-WAY HOMES, INC.
WALNUT, ILL.

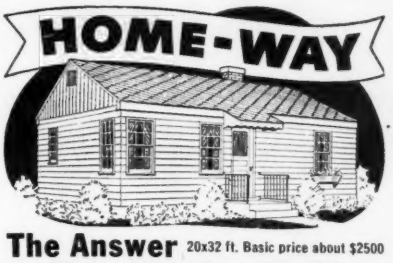
Makers of Home-Way Houses direct this ad especially to

LUMBER DEALERS WHO ARE READY TO

GO AHEAD WITH NEW METHODS

for building profits

Home-Way Dealerships offer you the way to cash in on the big demand with a quality product, liberal margin, personal service.



The Answer to Your Housing Problem 20x32 ft. Basic price about $2500

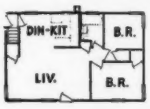
LOW PRICE . . . Through standardized sections, precision-built on assembly line and quantity purchases of material.

HIGH QUALITY . . . Selected lumber carefully processed with precision machinery under rigid inspection. Tested construction assures a tight, sound, durable building. Fully insulated.

DISTINCTIVE . . . Wide variety in size of house, exterior finish, room arrangement, location of windows and doors; your choice of basement or utility room models.

FAST, EASY . . . Hours instead of weeks for erection of precision-fitted panels, roof trusses, floor sections. Glazed windows and doors fitted and installed in factory. Priming coat of paint applied. You furnish plumbing, heating, wiring.

Your Choice of Floor Plans



Most Home-Way buyers choose a 20x32 or a 20x40 foot size. The plan shown here is for a 20x32 foot model with two bedrooms; one about 8x9, one 8½x12 ft.; living room 11½x19½, kitchen-dining space, about 7½x14. This and other floor plans are designed for easy expansion in the future, with standard panels. Partitions do not bear load, may be shifted to suit your desires. Wall panels are 8x8 ft.

Home-Way Houses look exactly like conventional houses. They have the desirable features of conventional houses. But the cost is surprisingly low. And you can be living in a Home-Way *within a few weeks from now*. The house you choose will be delivered promptly.

Get the Facts

Read the quick summary of Home-Way facts at the right. Then write for full details on buildings and merchandising plan.

CLIP . . . MAIL TODAY

The above ad appeared in Better Homes and Gardens

GBH-WAY HOMES, Inc., Dept. AD, Walnut, Ill.

Please send descriptive literature on Home-Way Houses and details of your merchandising and selling program.

Name .....

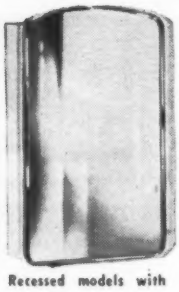
Address .....

Grote LEADS AGAIN!

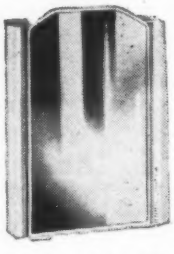
New and Sensational Improvement in Bathroom Cabinets

Grote Stor-in-door*

BATHROOM AND ALL-PURPOSE WALL CABINETS



Recessed models with deep drawn, seamless bodies — plate glass mirrors — adjustable glass shelves. Lighted and unlighted models.



Surface models with choice of plate glass and window glass mirrors or without mirrors for all-purpose storage.

Grote makes a full line of recessed and surface model cabinets—with and without Stor-In-Door.

Also Made in Lighted and Recessed Models.

There are many needs for these new and practical Stor-In-Door cabinets . . . The extra cabinet in the busy bathroom . . . in the shower room, the wash room — spice and extract cabinets in the kitchen and pantry — the back porch for outside wash-up — for the orderly clothes closet — convenient storage in home, shop or office.

Write today for complete information.

* Only Grote makes the Stor-In-Door. Patent pending.

Here's the fastest selling feature ever introduced in bathroom cabinets. Extra shelves are recessed inside the door to allow more useable shelf space. Every article in the cabinet plainly visible — every item conveniently within finger-tip reach. Made in surface types and in recessed models, with all the distinctive Grote quality features. Customers recognize this high quality construction — they like this new Stor-In-Door feature. They'll compare — and they'll BUY — the Grote Stor-In-Door Cabinet.

THE Grote MANUFACTURING CO., INC.

Grote Square - - BELLEVUE, KENTUCKY

Opposite Cincinnati

Established 1901

Kitchen Bathroom Laundry

Section 17

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DURING THE PAST 10 YEARS the term **package selling** has become more and more familiar to the building products merchant. The reason lies in the fact that the customer considers many home installation units as a complete package rather than a series of components that make up the package.

This is especially true of kitchen, laundry, and bathrooms, the utility centers of the home. Whether it be a new construction installation or a remodeling project, the most successful selling methods have centered around supplying the complete, finished job.

Thousands of dealers have adjusted their facilities to provide this service. In view of the business volume they have generated as a result, they feel they have made a wise move. Not only does it present a constant and stable source of business, but it also is closely integrated with many other products that the dealer has been selling for years.

The formula for merchandising package units of kitchens, bathrooms, and laundries is fundamentally simple: (1) have competent personnel to develop leads, help the customer decide on the style and design of the installation, and handle the other details of selling. (2) Plan and carry out a consistent advertising and store display program, in which the package idea is demonstrated. (3) Arrange with a financing agency to handle installment paper on these sales since the majority of these units are sold on a time payment basis. (4) If you do not take on the direct franchise for all the appliances that are included in these package sales, arrange with a local distributor to sell them on a commission basis, with the distributor responsible for subsequent service. (5) If you do not have the necessary craftsmen on your payroll, arrange to subcontract the installation work to a reliable specialist in this type of job.

Appliance and cabinet manufacturers have developed splendid dealer aids to help in the planning and organization of all the above; and as you will see on further investigation, the promotion of these package units will fit very well into your present program of service to the home owners in your trading area.

THE KITCHEN

Modern kitchen design is based on the efficient arrangement of the cabinets, appliances, and accessories that are used to accomplish the three primary work functions of this room.

1) Storing food and preparing it.
2) Cooking and serving it.
3) Cleaning up.

To do these jobs easier, quicker, and better, the housewife needs two major appliances—a range and refrigerator, to which may be added several supplementary appliances—dishwasher, garbage disposal unit, etc., each serv-

iced by a group of storage cabinets and a stretch of work surface. Each division of appliances, cabinets, and work surfaces is called a work center.

Organization of Work Centers. The three work centers, properly arranged and outfitted and in proper relation to each other, so that work flows in a straight line from one center to the next, make up the basic planned kitchen.

As a result of an extensive step and motion study by Westinghouse Electric Company it was found that the refrigeration and preparation center should be located near the outside entry where food is delivered.

Here should be grouped perishable and non-perishable foods, all sorts of baking dishes, salad molds, cake tins, pie pans, flour sifters, graters, mixer, etc., because they are first brought into use in this center.

This arrangement makes it possible to prepare either a single recipe or food for an entire meal with a minimum number of steps. There should be a generous work surface next to the refrigerator for the actual preparation. The most ideal arrangement is a continuous work surface from refrigerator to sink, as much preparation requires the use of the sink.

Cooking and Serving Center. This center is best located near the door to the dining room for convenience in serving.

Following the principle of storing equipment at the point of first use, frying pans, griddles, pot lids, cooking cutlery, coffee maker, tea pot, bread and pastry toaster, etc. are kept in this center. Since most serving dishes are first used at the range, they are also kept here.

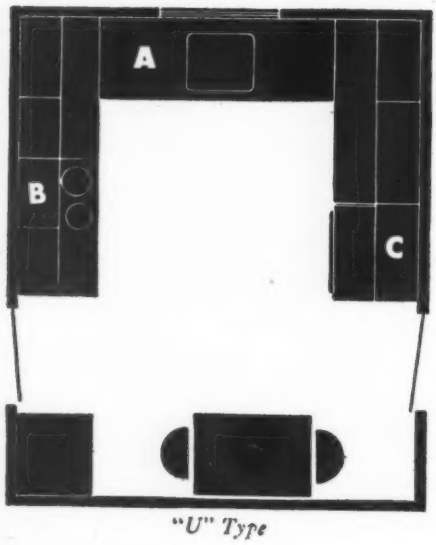
Cleaning Up Center. Water being used for both preparation and cooking, as well as cleaning up, this center should be stationed between the other two. A generous work surface should flank both sides of the sink.

This center houses the silver, paring knives, sauce pans, cleaning materials, and provides a ventilated compartment for storage of potatoes, etc.

Water Heaters and Kitchen Planning. The water heater is always considered essential to good kitchen planning. Whether the unit is located in the kitchen or not is unimportant; but an adequate, efficient water heating system is an important part of modern kitchen planning.

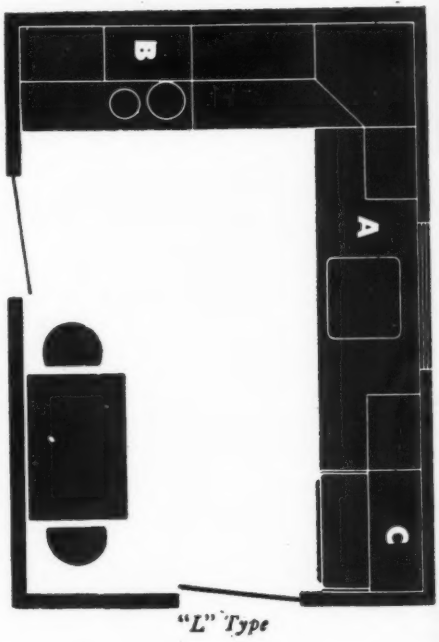
Determining Cabinet Storage Space Requirements. Research has revealed that six square feet of upper cabinet shelf space should be allowed for each person in the home.

THERE ARE ONLY 7 KITCHEN TYPES

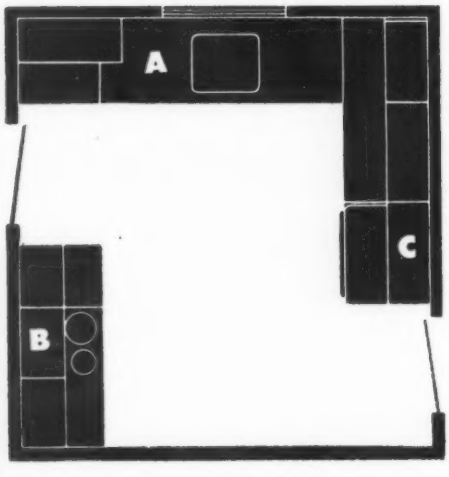


"U" Type

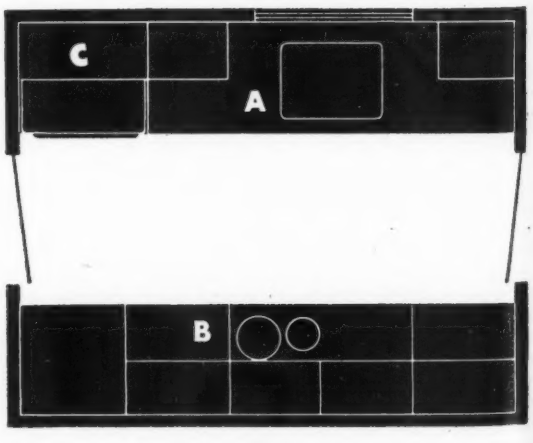
In the accompanying layouts, "A" indicates the Cleaning Up Center, "B" the Cooking and Serving Center, and "C" the Refrigeration and Storage Center.



"L" Type



Broken "U" Type



Two-Wall Type

Modern Portable Display Stand Available with the Packard Line

designed to merchandise . . .

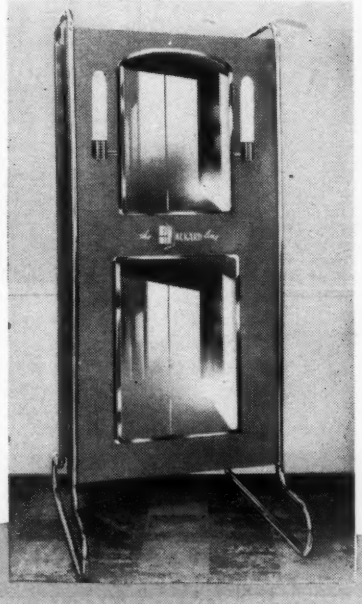
This New and Beautiful LINE of SEAMLESS BATHROOM CABINETS

ONE SIDE DISPLAY STAND SHOWN ON SALES FLOOR

Here is the only way to sell and merchandise bathroom cabinets . . . here is a line that has genuine customer appeal because of styling and price.

Now PACKARD offers you the merchandising method proven most profitable. Obtain one of these gleaming new display stands . . . place it in a prominent spot in your show room or show window . . . and watch YOUR sales climb!

The stand holds 4 cabinets . . . 1 of each of 4 sizes in the PACKARD line . . . is 72″ high . . . 30″ x 30″ at the base. Sturdily constructed of 18 gauge furniture tubing. Steel panels. Shipped knocked down. Easy to assemble.



REVERSE SIDE OF STAND

Write direct for complete catalog on the PACKARD line and information on how you can get this display for your own showroom.

ORPORATION

3354 NO. CRAWFORD AVE.
CHICAGO 41, ILLINOIS

In addition to this, six square feet should be added for entertaining, and another six feet for accumulation.

Upper storage space is the cabinet shelf space above the counter line. The square footage applies to shelf area only.

Base cabinet storage space is calculated on a linear front foot basis, because the many variations in this type of storage make a square foot shelf area calculation needlessly complicated. Base cabinets should occupy all the space beneath upper wall cabinets not required by range, refrigerator, dishwasher, etc.

An exception is when maximum amount of linear footage of base storage space is available, with a shortage of upper, due to window locations. In such cases, make up the difference by installing an upper cabinet or a tall shelf cabinet elsewhere in the room, usually in a corner. It is unnecessary to install another base cabinet under this. The important thing is to reach a balance of storage space above the counter. Substandard storage space reduces efficiency, makes for poor housekeeping, and is the bane of the occupant's existence.

Seven Types of Kitchens. In figuring both new home and remodeling installations, you will find that all designing will fall into one of seven basic room layouts. These are illustrated below, and are defined as follows:

"U" Kitchen—This is the most ideal type because work surface is continuous around three sides of the room and traffic is kept out of the work area.

Broken "U" Kitchen—This type usually requires a minimum of structural changes.

"L" Kitchen—Highly efficient, with two walls left open for door and window openings. Also provides space for incorporating breakfast alcove.

Broken "L" Kitchen—This type, like the broken "U" eliminates expensive structural changes.

NORMAL OCCUPANCY OF RESIDENCES

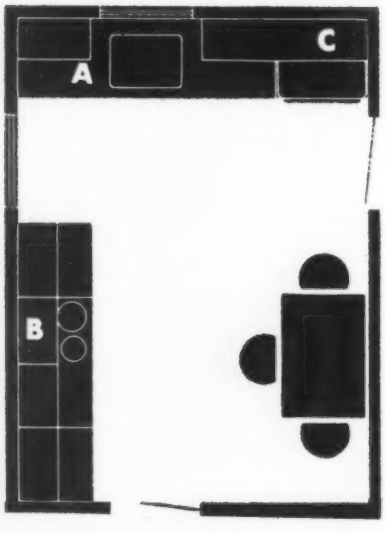
Number of Bedrooms	Number of Persons
1	2
2	3
3	4
4	5
5	6

STORAGE REQUIREMENTS FOR RESIDENCES

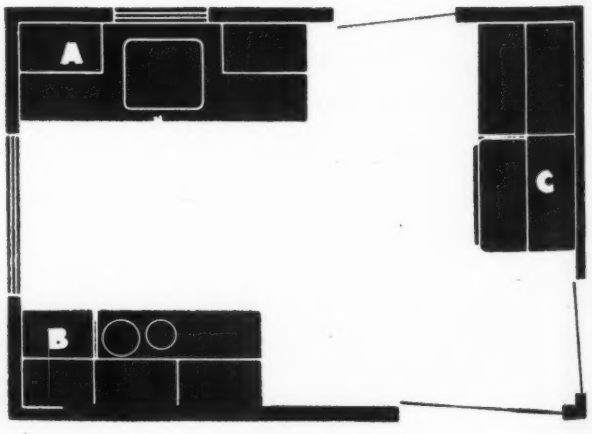
Number of Bedrooms	Upper Shelf Storage Sq. Ft.	Base Storage Linear Feet	
		Minimum	Maximum
1	24	3	4½
2	30	4½	6
3	36	6	7½
4	42	7½	9
5	48	9	10½

STORAGE REQUIREMENTS FOR APARTMENTS

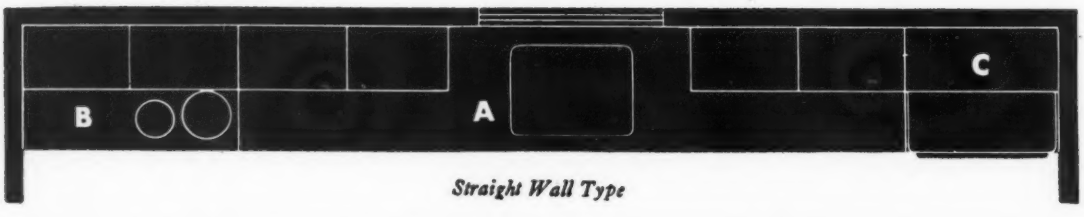
	Upper Shelf Storage Sq. Ft.		Base Storage Linear Feet	
	Min.	Max.	Min.	Max.
1 room with alcove kitchen and in-a-door bed	8	12	1¼	2
1 bedroom	12	18	2	3



Broken "L" Type



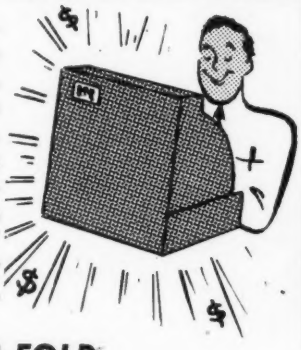
Individual Center Type



Straight Wall Type

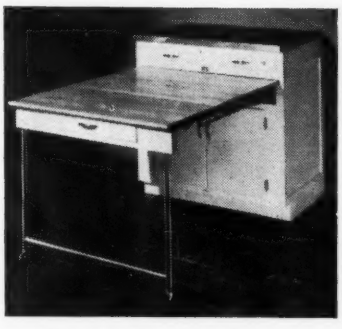
Space Savers WITH CASH REGISTER APPEAL

Because they're "naturals" in today's compact lower-cost home and small apartment market. *Sterling-Fain Dina-Fold uses wall space to save floor space. Perfect solution to a combination living-dining area. Folds into cabinet. Deluxe model "C" closes to 36¼" x 5' 9⅜". Opens to 67" x 42½". Model "B" slightly smaller. Install in 2 x 4 partition.



*STERLING-FAIN DINA-FOLD

*Sterling-Fain Dina-Fold takes place of breakfast nook. Ideal for vacation cottages, porches, patios, recreation and children's rooms. Shipping weight 100 lbs. crated.



*STERLING GLYDEAWAY

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HERE IS your opportunity to get in on the ground floor with an established, aggressive manufacturer of all-steel, custom kitchens, whose product is tested and proved both for quality and salability. Here's what Beautycraft offers you . . .

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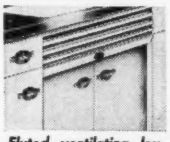
Rounded contours, hidden hinges and door pulls, welded steel tubular construction.



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City ..... Zone... State.....

THE ABOVE before and after photos show how a modern kitchen installation can replace an antiquated one in a home. Notice how many other items you sell, in addition to the cabinets and appliances, are included in a package installation.

Individual Center Kitchen—The logical solution for a badly cut-up room.

Two-wall Kitchen—An ideal arrangement for the small, narrow room.

Straight-wall Kitchen—Offers maximum convenience in a minimum of space.

Planned Kitchen Lighting. The kitchen is the workshop of the home and should, therefore, be well illuminated. It should be free from glare and shadows. A central ceiling fixture is not enough. Supplementary lighting is needed, and should be so placed that the homemaker never works in her own light. Ideal kitchen lighting should include the following:

General Lighting.—A central ceiling fixture of semi-direct, semi-indirect, or totally indirect design to provide general room illumination.

Lights at the Centers.—Correct lighting should also be provided at each center.

Switches and Outlets.—The switches for the center light are usually located near the doors so there is no need to grope in the dark upon entering the room.

Local lighting units over the sink, range, and work centers should be controlled by switches on or below the fixtures.

At least one twin convenience wall outlet should be installed in each center with additional ones for the refrigerator, dishwasher, or other major appliances.

For additional information concerning lighting and light fixtures, see Section 15.

INSTALLATION DATA

One of the first steps in kitchen installation is to check the corners of the room to see if they are square. Slight variations can be eliminated by scraping or filling in the plaster. Where the room is badly **out-of-square,** however, it is necessary to use a cap-strip at the top of the backsplasher to close the misalignment.

If individual work surfaces for each center are used with the surface seal corner strip to close and seal the joints between, the counters can be opened a sufficient amount at either the front or back to care for the irregularities in the angle of the wall.

Checking the Floor. The next step is to check the floor to be sure it is level. Shims under the cabinets may be used to make up slightly off-level floors. Extreme cases may require the installation of a completely new subfloor.

Checking Walls. Walls that are out of plumb affect only the upper wall cabinets. These can easily be plumbed up by shimming out either the top or the bottom of the wall cabinets at the time of installation.

Should structural changes be necessary, such as moving doors or windows, this should be done before actual installation work begins.

ASSOCIATED EQUIPMENT AND MATERIALS

Base Cabinets. Base cabinets are of two types, drawer or cupboard; or combinations of both. They are usually 30½" high, placed on a 4" toe space with a counter 1½" in thickness. This makes a total of 36" from floor to top of counter. Cabinets are usually 24" deep.

Wall Cabinets. These are of two types, open and closed. Many modern kitchen designs include both. They are available in a variety of heights and widths. Standard heights are 18", 24", 30", and 36". Standard widths are 15", 18", 21", 24" 27", 30", 33", and 36".

Wall cabinets higher than 36" have little value from the standpoint of convenience. The use of a standard base of 36", plus 16" between base and 36" wall cabinet, makes an overall height of 88". The open space between top of cabinets and ceiling should be burred down to eliminate a definite dust trap, make cleaning easier, and to enhance the appearance of the kitchen.

For further information about cabinets in the home, see Section 2, Millwork.

Floor Coverings. Floor coverings for kitchens are usually rubber or linoleum, although tile is also widely used. These materials are available in attractive patterns and colors to suit the taste of every homemaker. See Section 9, Floor and Floor Covering.

Wall Surfaces. Exposed wall surfaces may be finished in a wide variety of ways. Tileboard, plastic faced plywood, ceramic tile, composition tile, metal tile, glass linoleum, rubber or asphalt tile, or plain plaster painted. The choice is subject to the amount of money the customer wishes to spend, or to the decorative effect desired.

Most of these products are standard lines with building products dealers, and the sale of packaged kitchens opens the way for increased sales of these items.

THE BATHROOM

Since the trend is toward more bathroom space in the home, there is a greater opportunity for the dealer to increase his sales. This trend in the case of the average home follows one of three patterns:

1. Two or more full size, standard equipped bathrooms.
2. One main bathroom plus utility units of lavatory and toilet, or shower and toilet.
3. One or more large bathrooms partitioned off so more than one person may use it at a time. These often include two lavatories.

This trend is caused by the family demands at certain

A MODERN BATHROOM that will delight any family. Fixtures, medicine and storage cabinets, floor and wall covering, accessories, and electrical fixtures and outlets are all included in this installation job.

times, particularly mornings when everyone in the family is getting up at the same time.

This highly important personal convenience and sanitary center is constantly subject to improvement and refinement; for this reason, remodeling of present bathrooms and adding new ones in existing homes can be a big part of the dealer's merchandising plan. Economy-sized units are offered that allow a complete bathroom to be put into a very small space in an existing home.

Dealers should be familiar with the complete bathroom units which have been developed recently. One complete unit includes kitchen, laundry and heating center combined with the bathroom.

Planning the Bathroom. In planning the bathroom for either a new home, or the remodeling of an old one, there are several accepted points of good design to consider.

Nothing should be placed under a window, unless it may be a heating outlet. No plumbing fixture can be conveniently installed under a window; but a radiator or convector located there, will overcome drafts and keep the room warmer. A window over a tub is drafty for the bather, and is quite inconvenient when curtains have to be hung, the windows washed or raised, storm windows or screens put up.

As a general rule, the bathroom should be placed where it is most convenient. Plumbing costs can be saved however, if it is placed directly over the kitchen; or in a one-story home, back to back with the kitchen. In this way, one stack or soil pipe will serve two rooms. When this is done, however, the wall that carries the pipe must be at least six inches thick.

Money can also be saved if all plumbing fixtures are placed against one wall. This cuts to a minimum the amount of behind-the-wall piping, and simplifies installation. The poorest plan from a cost point of view has one fixture on each wall.

The bathroom door should be 28" wide and should swing into the bathroom. The view through the door should be of the lavatory or tub, never the toilet.

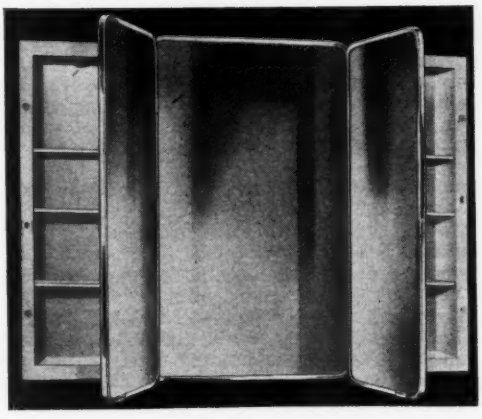
Minimum space between fixtures is 6 inches. Here are the most common sizes of fixtures:

Tub (rectangular) .....2½x5 feet
Tub (square) .....4x4 feet
Lavatory....17x19, 18x20, 20x24, 14x26, 21x24 inches
Water closet .....23x27 inches
Shower.....32 inches square up to 3½ feet square

Unlike kitchen equipment, bathroom fixtures need have no relation to each other. It is possible to contain all of the necessary fixtures for an adequate bathroom into a space 5 feet square, but for a family bathroom, a room should be at least 6x8 feet.

Storage Space. If there is one definite, unmistakable trend in bathroom planning it is in the direction of providing a generous amount of space for storage. The fail-

NEW
"Vanity" Cabinet



Sensational for Its Eye-Appeal and Low Price

At last! A beautiful "Vanity" Cabinet at a price so low that builders can install it as a feature of attraction in even the lowest price homes!

Swinging mirrors at each side serve also as doors for the right and left-hand cabinets. Center mirror is stationary and does not require fastening to the wall. All mirrors are copper-backed and are encased in stainless steel frames.

Adjustable shelves. Piano hinges. Cushion-spring door stops. Tooth-brush holder. Razor-blade drop. All hardware chrome-plated.

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15 Models

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Division of Deslauriers Column Mould Co., Inc.

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The Ideal CABINET

ure to make this provision is one of the sins of prewar bathroom planning. How many bathrooms there are in which there isn't even place to store a towel, soap or bathroom paper! Yet that is where these and many other items should be stored—at the point of use. Definitely, a provision for storage space—and a generous amount of it—is a must in bathroom planning.

Storage space can be provided in various ways. One method is to use built-in pre-fabricated cabinets something like the cabinets which are so popular in kitchens. Sometimes it is possible to combine the twin ideas of partitions for fixtures with storage space, as for instance, having cabinets at one end of the tub to constitute part of the shower recess, or having the cabinets between the tub and water closet, thus providing greater privacy for both fixtures.

Medicine Cabinets. Medicine cabinets are made of seamless porcelain, seamless baked enamel, or wood, trimmed with chromium-plated brass with a mirrored front. Lighting is either indirect or fluorescent. One of the newer developments is the illuminated wing cabinet.

While the better medicine cabinets have a generous amount of space, there is no use blinking the fact that they are not large enough to store all the medicines, cosmetics, and toilet articles commonly used in the bathroom. Several alternatives are possible. One is the installation of two medicine cabinets, one over the lavatory and the other at a convenient place, possibly near the window. The other is to provide space for medicines in one of the other cabinets, as for instance the cabinet intended for linens. Still another possibility is to utilize the space under the lavatory which is otherwise wasted.

Safety Precautions. Another **must** in bathroom planning is **safety.** Accidents in the bathroom are not unusual—far too frequent, in fact. Many are preventable. Planning the bathroom for safety is a factor in the prevention of accidents. Electric light switches and outlets should not be placed where they can be reached by a bather in the tub. The reason is obvious—the tub is a perfect ground for an electric current. Should the switch or insulation be defective, the circuit is completed.

The bather should be protected against slipping in the tub by grab-bars which should be firmly attached to the wall. There is much to be said in favor of the metal L-shaped grab-bar which provides a firm hold, both vertically and horizontally.

Other Suggestions. Here are other suggestions that have been made for increasing the usefulness of bathrooms.

1) Built-in dressing table in the bathroom. The trend toward the use of the bathroom as a dressing room is so definite that the provision of a dressing table is almost a **must** in bathroom planning. New materials provide an opportunity for making this feature distinctive and beautiful. In one suggested plan a lavatory is mounted in a counter top with a dressing table adjoining.

2) A dressing room adjacent to the bathroom is advisable if there are several in the family to use the bathroom at the same time, because it relieves the traffic in the bathroom proper. Moreover, temperature in a dressing room is usually more comfortable for dressing, being in between the steamy warmth of the bathroom and the cooler more livable temperature of the bedroom.

3) Panel of drawers at the end of recessed tub. This innovation permits use of a lower-priced recessed tub and also provides storage space at a convenient point.

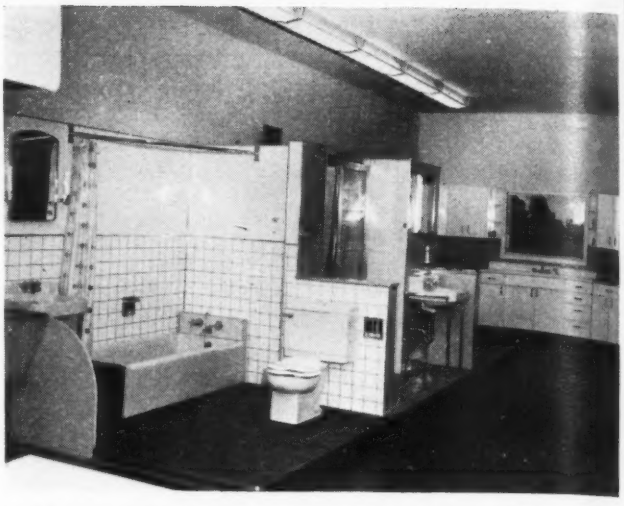
4) Niches for radio and books. Many people will appreciate the thoughtful provision of niches for radio, books, and magazines in the bathroom. It is so much neater to have niches so that these things can be tucked into the walls instead of having them on exposed shelves.

5) Built-in bathroom scale. An ingenious method is to provide a place in the floor so that the scale can be streamlined with the floor surface. The scale can also be recessed in the wall when not in use.

6) In-the-wall cabinet for health lamps or electric heater.

7) The dental lavatory is a compact plumbing fixture developed by the industry exclusively for brushing of the teeth. This fixture adds to the health-protection features of the bathroom, as well as increasing the usefulness of the lavatory, since one person can wash while another brushes his teeth.

Hot Water Uses	No. Persons Using	No. Times Used Monthly	Gallons of 150° Hot Water Used Each Time	Total Gallons Used Monthly
Tub Baths or Showers	4	32	7.0	224
Hands	4	540	0.9	486
Shaving	1	30	2.0	60
Dishes	4	90	2.8	252
Laundry	4	4	30.0	120
Miscellaneous	4	30	3.0	90
				Total 1232 gallons



MODEL KITCHEN, bath, and laundry displays in the store show the customer how the complete room will look in his home, and are invaluable sales builders.

LAUNDRY PLANNING

The modern home laundry is an increasingly important work center for the homemaker. It should be as carefully planned at the kitchen. With the tasteful selection of wall, floor, ceiling treatments and lighting arrangements, the laundry can be made equally attractive.

Because it represents a weekly chore—and occasionally a daily one—the laundry should be located in attractive surroundings with an efficient arrangement of appliances, adequate lighting and the utmost in convenience. The layout should provide ample and convenient space for washing, drying, ironing and storage. The laundry may be combined with the kitchen, be adjacent to the kitchen, be in a first-floor utility room or in the basement.

Laundry equipment for a typical home includes a washing machine, electric iron and ironer, clothes dryer or drying racks, and adequate cabinet space for soaps, detergents, etc.

LAUNDRY LAY-OUT

When the laundry is located in the basement, the prime consideration is that it be directly below the clothes chute and near the basement stairway and outside entrance. It should be generously supplied with daylight and ventilation.

The laundry room should be almost square, approximately 10x12 feet and be constructed with finished walls and ceilings in white or bright colors. Flooring should be finished with asphalt tile or linoleum. Stationary tubs are a requisite. (See Plumbing Section.)

Counter work space may be at the same recommended height—36 inches—as in the kitchen and the tubs adjusted to the same height.

Some washing machines of the rectangular type are built with removable flat tops and adjustable leveling studs to conform to work counter height, making a continuous work surface.

Wall cabinets or open shelves can be of much use for storage, and should be the same dimensions as kitchen cabinets.

Rotary-type washers are usually fitted with quiet rollers permitting them to be shifted easily. If desired, suitable closet space of adequate width and depth can be built to house them when not in use.

Similar procedure can be followed with regard to ironers which are either collapsible, fold-away, or flat-top at counter height.

In planning laundry lay-out, two other considerations which will increase efficiency are:

1. The inclusion of the domestic hotwater heating unit. Its closeness will insure adequate hot water supply. (See Plumbing Section.)
2. The location of proper lighting fixtures over the work areas, and well planned placement of the required electrical convenience outlets.

For laundries adjacent to or a part of the kitchen, all of the suggestions in the preceding paragraphs relating to the general lay-out apply here with two exceptions. These are:

1. Space is usually more restricted and greater compactness is necessary.
2. Space limitation may compel the location of water heater and drying racks in the basement and force the omission of tubs. Space may be planned for electric drying units.

Some of the laundry equipment and items which dealers can sell are:

Laundry Appliances

Electric washing machine	Ironing boards
Electric ironers	Clothes chutes
Electric flat irons	Laundry storage cabinets
Clothes baskets	Wash tubs—portable
Clothes dryers—gas	Wash tubs—stationary
Clothes dryers—electric	Wash boards
Curtain stretchers	Wash boilers
Drain hose—for washers	Wringers
Hampers	Water heaters
Indoor dryers	Water softeners

Other related items usually stored in laundry—

Carpet sweepers	Scrub brushes
Chamois cloths	Wall dusters
Dust mops	Wet mops
Oil mops	Window brushes
Push brooms	Window cleaners
Radiator brushes	Vacuum cleaners

DISPLAYING EQUIPMENT

Kitchen, laundry and bathroom equipment lends itself to development of interest-arousing displays.

The display arrangement will necessarily depend on the available show space in the windows and along the walls.

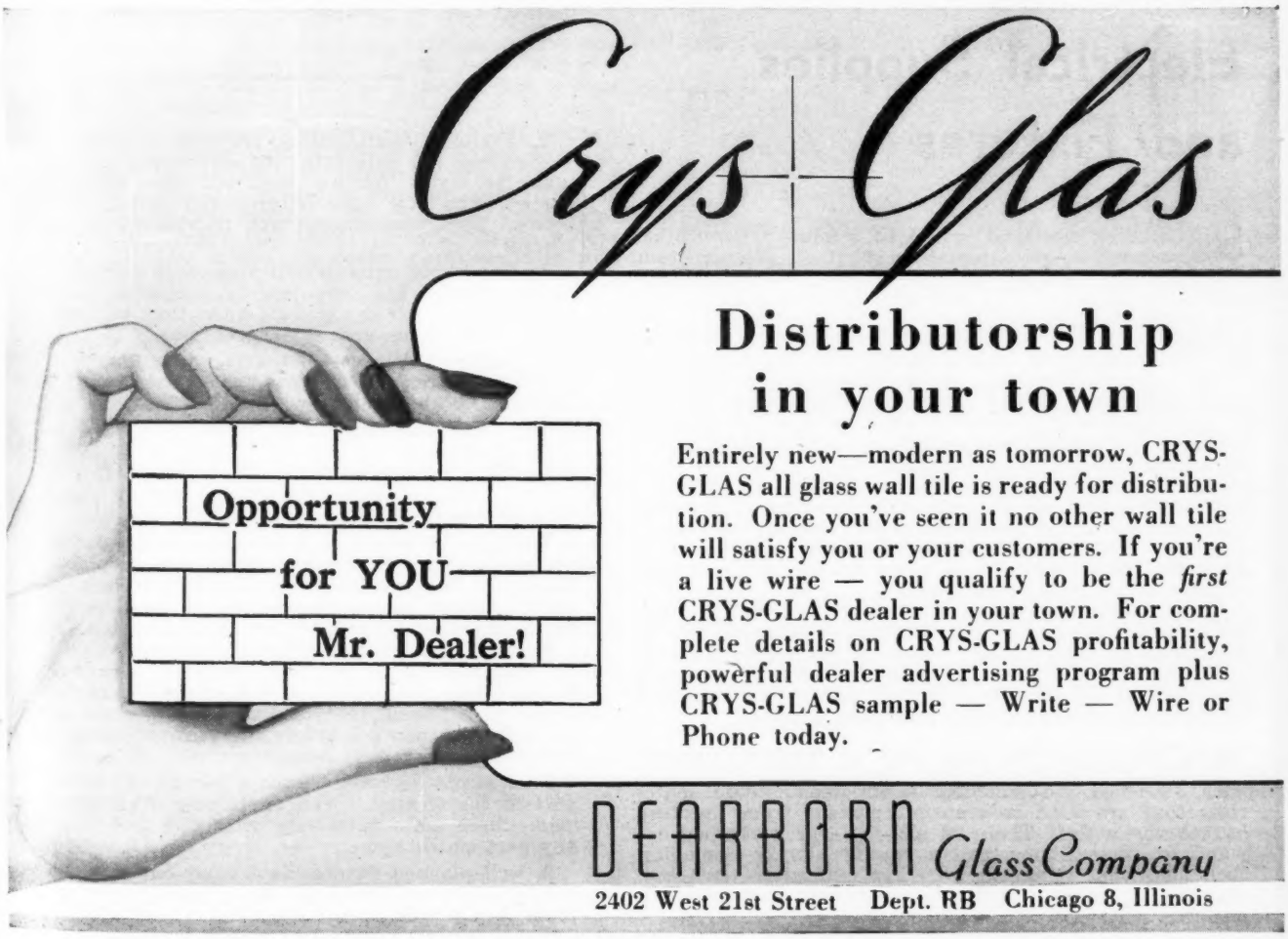
By constructing display floor partitions, the various complete units can be shown in appropriate settings. Change these often enough to hold the interest of customers and to show the many different possible layouts, especially in the case of combination kitchen-dining rooms and kitchen-laundry groupings.

Effective displays also afford the opportunity to show installed samples of floor and wall finish and lighting effects.

The lavish use of electric illumination will draw customer's attention, and also offer display opportunity for the electric supply and fixture department. Price tags should be in bold figures, easy to read.

There is one important point to re-emphasize on the subject of quoting cost to the customer. In a vast majority of cases the customer prefers to distribute the cost over a period of time. This necessitates financing through a financing agency.

After estimating the cost of the job, therefore, quote the total cost in terms of its monthly payment. A kitchen installation for $25 per month is far easier to sell than one for $750.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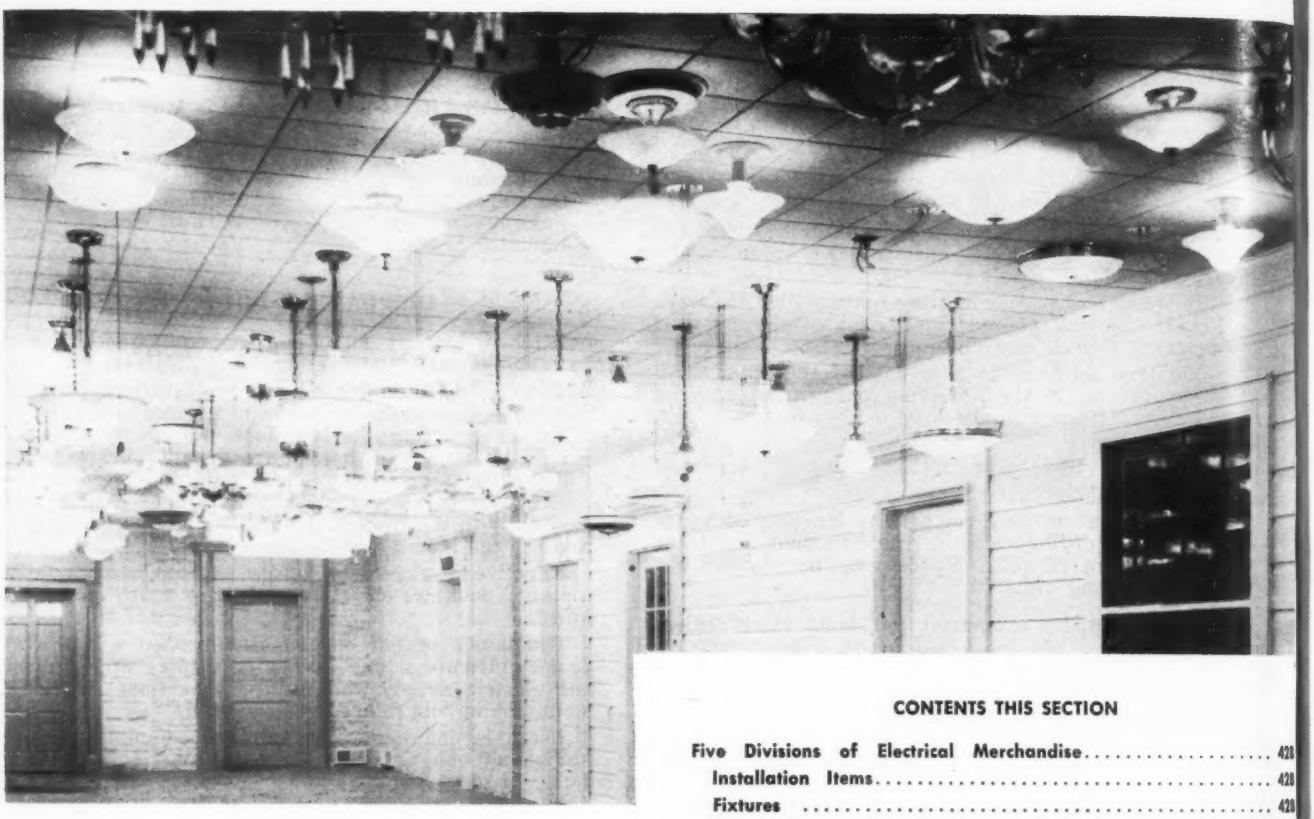

Section 18

Electrical Supplies and Fixtures . . .

SINCE THE electrical system of a house or any other structure is an integral part of its construction, the building material dealer is finding it increasingly necessary to consider electrical items an important factor in his operations.

Basic items such as cable, conduits, junction and switch boxes insulators, etc., that comprise the built-in segment of the electrical system, are not complete without fixtures, switches, outlets and other finish items. Also, certain appliances are a necessary part of a complete package. For this reason, many dealers who have started with functional electrical supplies as a service to their contractor customers, have increased their electrical departments to include all items used in the modern home.

In addition to the new construction market, these dealers have found that a profitable volume of business is available from consumers if a consistent consumer-merchandising program is conducted.

This trend is accelerating for dealers find that a profitable electrical supplies and fixtures department can be developed by (1) offering "one-stop" service to the customer and (2) including electrical appliances in the lump sum price of the house so that their cost is paid as a part of the home buyer's monthly mortgage payment.

FIVE DIVISIONS OF ELECTRICAL MERCHANDISE

1. Electrical system installation items: those materials that are used to transmit current from the fuse box to the outlet. There is also a large consumer demand for these items, and a counter display including such additional things as wire for extensions, switches, outlets, etc., makes a profitable department of the dealer's business.

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2. Fixtures—wall, ceiling, portable. A small display of these items not only helps the contractor customer select what he wants for his jobs, but also appeals to consumers who buy such fixtures and install them themselves. Both conventional and fluorescent should be included.

3. Household units—small appliances such as toasters, mixers, grills, etc., are largely consumer merchandise. They can be used to excellent advantage as "leaders" for tie-in advertising and sales programs.

4. Large appliances—washers, dish washers, refrigerators, ranges, deep-freeze units, etc. (See Kitchen, Laundry, Bath Section.)

5. Power tools—saws, drills, sanders, etc., for small home workshops or for the tradesmen in your trading area. (See Power and Hand Tools Section.)

2. Lighting Fixtures

Lighting fixtures open a new opportunity for additional volume and profit. Because they can be placed so attractively, they are ideal for display purposes, either on walls, ceilings, merchandising panels, in display windows or for illuminating other items the dealer has for sale.

Except for display stock, no stock inventory is required for fixtures. They can be ordered in the design and finish which the customer selects for there is usually ample time during the construction period to obtain fixtures for any new job before it has advanced to the stage where fixtures can be hung.

Fluorescent lighting fixtures should have a definite part in the display. Well engineered developments have made these units extremely attractive and practical for any part of the home.

A well planned fixture display lay-out will not occupy much space, will enhance the appearance of the sales room, will represent a modest outlay and will enable the

customer to buy with confidence. Such a display can well become a source of extra business by reason of the fact that the electrical contractor (many of whom do not have any display room) will bring his clients to the dealer's display to make selections. In doing this, the fixture customer also exposes himself to the other sales appeals which the dealer may offer.

If display facilities permit, another lucrative field for the dealer consists of portable lamps, sun lamps, desk lamps, etc. These items should not be overlooked.

3. Household Units

Location, display facilities and the local market potential largely determines whether the dealer will handle toasters, coffee makers, grills, mixers, radios, electrical clocks, etc. Dealers who have a hardware department frequently find that a small stock of these electrical items can be counted upon to develop a steady turnover.

These are very popular gift items and the heaviest volume may be expected during the holiday season. Advertising and sales effort should be concentrated on them at that time.

It must be remembered that these items are largely purchased by women. Therefore, sales, advertising, and display methods must be designed to attract feminine buyers.

This type of merchandise makes excellent leaders for tie-in with other merchandise and the dealer who combines them with appliances, cabinets, fixtures, etc., in a complete package kitchen sale, finds not only an additional sales appeal, but added profits as well.

4. Appliances

Ample floor space and accessible location are two definite requisites for successful selling of these items. However, they can and are being successfully merchandised by numerous aggressive retail dealers who had acquired appropriate display facilities and are prepared to follow through with servicing, etc.

Such appliances include washing machines, dish washers, refrigerators, deep freeze units, vacuum cleaners, water heaters, electric stoves, etc. Only floor samples are required because delivery is not an immediate requirement. As previously noted, there is a trend to include appliances in the entire house mortgage structure, enabling minimum payments over a long period and giving both the dealer and the customer the benefits of long range budget payments.

The fact cannot be overemphasized that the average consumer considers a kitchen, either in a new home or a remodeled one in an older structure, as a complete package. He cannot visualize it from an assortment of cabinets, appliances, fixtures, etc. The most successful merchandising programs, therefore, are based on the package sale idea where the dealer plans, installs, and arranges the financing for the complete job. In many areas where dealers are not supplying this service, specialists who do nothing else are making an excellent business of just such service.

The package idea also is best demonstrated in the dealer's store with a "bay" display that simulates a complete installation, thereby enabling the customer to visualize exactly how the equipment will look in his own home.

See Kitchen, Laundry, Bathroom Section.

5. Power Tools

This division offers many opportunities for development. Briefly, it consists of an assortment of bench saws, shapers, planers, sanders, band saws, jig saws and portable hand tools. In addition to saws, there are portable and stationary drills.

In some cases a profitable rental power tool business, particularly in the case of portable electric sanders, can be developed. In addition to selling home builders and contractors, power tool sales can be cultivated with manual training instructors and students and with the home craftsman. As the hobbyist and craftsman will rely on the dealer for correct woodworking advice, power tool sales, as well as lumber, glue, etc., can be promoted by capitalizing on this fact.

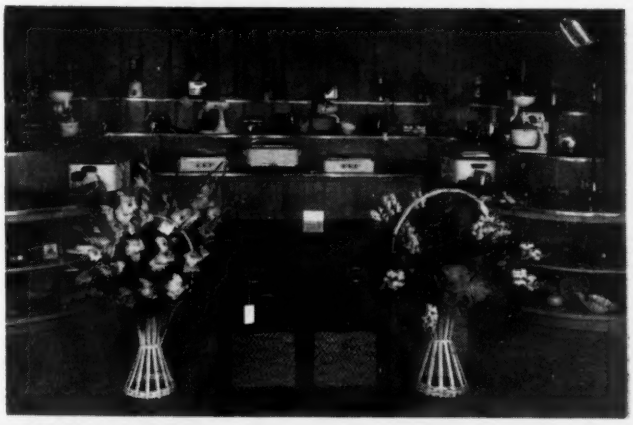
For further details, see Power and Hand Tools Section.

ORGANIZATION OF THE DEPARTMENT

Electrical supplies are used so extensively that the dealer should carefully survey his present physical plant, sales policies and personnel to determine how an electrical supplies and fixtures department will fit into his present business organization, or what changes must be made to allow such a department to function efficiently.

In making such an analysis, the dealer must examine his facilities, including space for stock, for display (either counter or window or both), the accessibility of his present location for customers, and the possibility of combining other departments such as paint, wallpaper, hardware, kitchen, laundry and bathroom equipment to help build profitable store traffic. He must appraise local competition. Some brand name merchandise may be already allocated by franchise to others so that the dealer cannot handle certain items unless he develops reciprocal trade relations with the existing franchise holder.

In most cases it is not intended that the dealer should invest in complete stocks and inventories. Instead, he



ABOVE are attractive methods of displaying small electrical supplies. The main point to consider when planning a display of this type is that it must exert its appeal to women for the majority of sales are to feminine buyers.

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Second, a planning book that tells what people want in new houses, gives planning data to help you develop plans that meet those demands most effectively, efficiently and economically, describes and illustrates four houses where these principles have been tried and proved.

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DEMONSTRATIONS by manufacturers' personnel in your own store are excellent ways to get the prospects into your store to see how the equipment is used in the home.

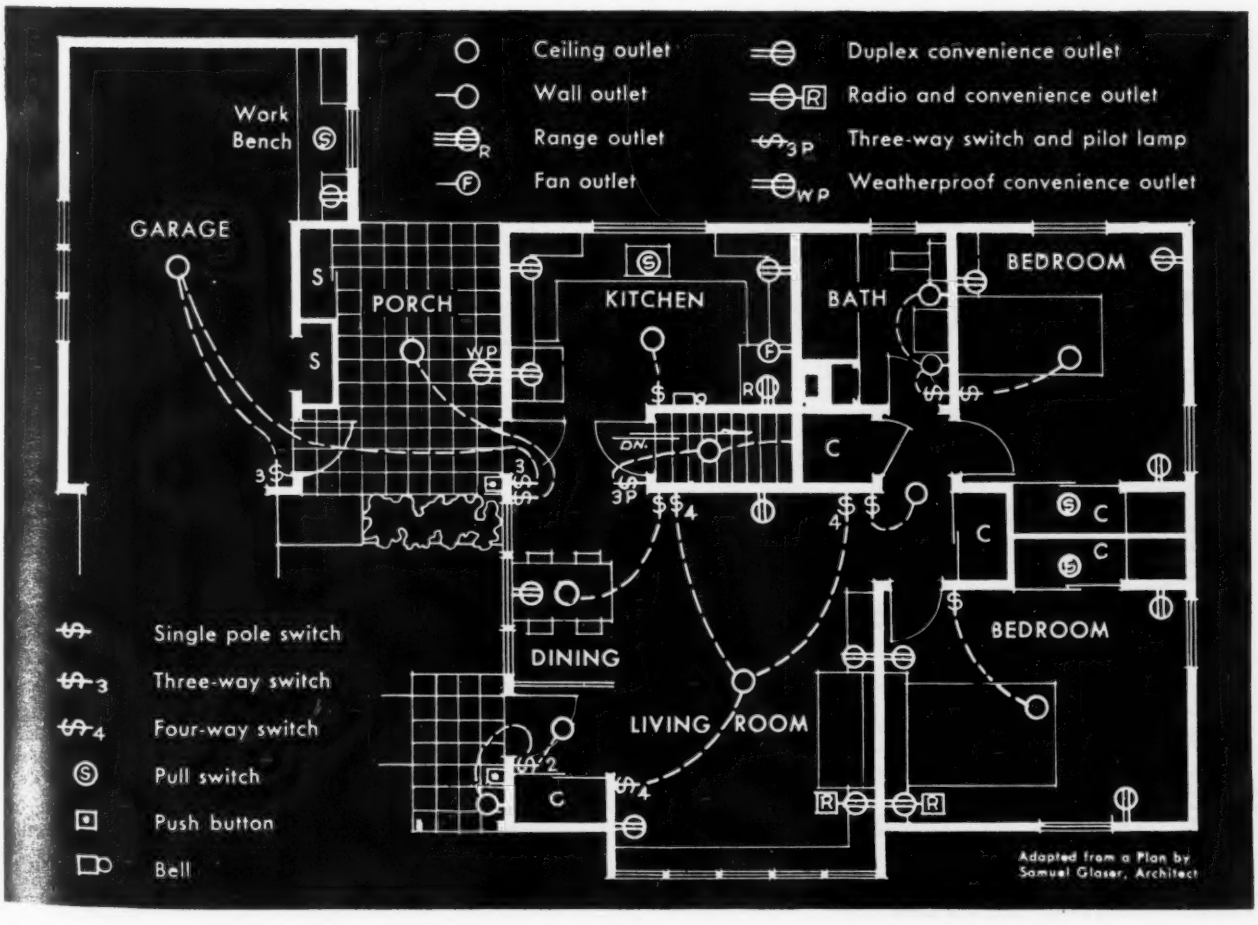
schedule, the dealer should be equipped with catalogues, pricing schedules, display samples of mounted wall and ceiling fixtures and other items that are required to meet customer requirements.

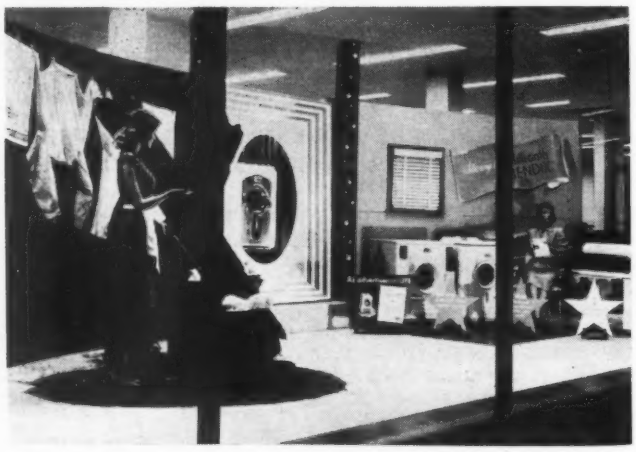
need only carry the quick moving essentials in limited quantities. Arrangements to serve the customer should be so well established that, when and as the construction of the home has reached a certain stage, the needed supplies or fixtures can be delivered on schedule.

In organizing a department that will extend a complete service and make the "one stop" idea possible, the dealer must be able to furnish those essential items or parts of any home building project that will relieve the customer from being obliged to shop elsewhere. In addition to carrying those items that are needed on short notice in order to allow construction to move ahead on

INCREASING THE DOLLAR SALES VOLUME

1. Develop adequate sources of supply for the items required in each division.
2. Tie up with nationally prominent Brand Names and profit by their sales promotion.
3. Carefully plan display lay-out to exhibit a choice example of each displayable unit.
4. Equip the division with up-to-date descriptive catalogs and color charts or pictures of installation ensembles to supplement the display.
5. Keep the price books or charts up-to-date to enable quick price reference and part numbers in writing orders.
6. Engage an electrical engineering student or a young electrician who likes the business and who has a sales personality that will enable him to both explain and sell.
7. Analyze the customer's over-all needs and select those items which can be incorporated in the mortgage payments as first choice.
8. Establish co-operative trade relations with one or more dependable electricians who will install the items which are part of the current stock and who will, because the dealer has created the sale, be agreeable to having the dealer realize his legitimate overhead and profit on all materials sold.
9. When electrical materials or stationary appliances are incorporated in the mortgage, extend credit to the electrician for such items and charge them to the job.
10. Make the counter displays attractive. Have them





WINDOW DISPLAYS, well staged and lighted, not only add to the attractiveness of a store front but have a powerful influence in developing new prospects for the items displayed.

well illuminated with easy to read price tags and locate them near the Hardware counter items so that a customer for either has the opportunity of buying more.

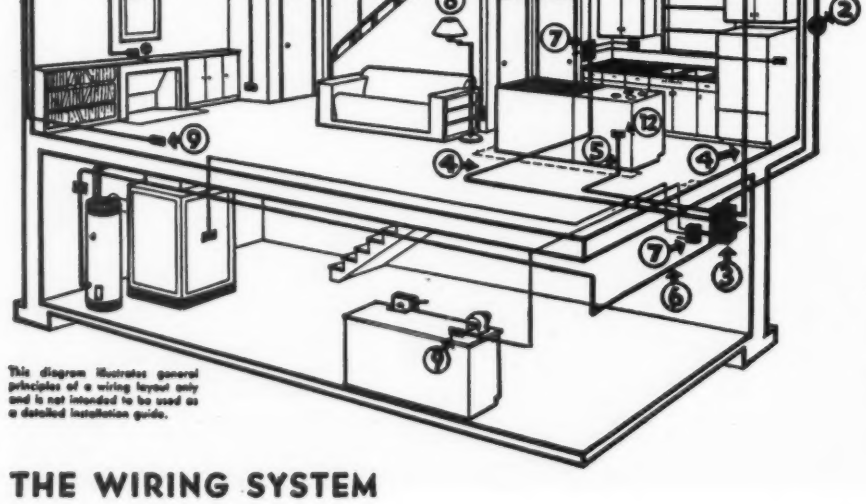
11. Effect service arrangements for the replacement of burned out heating elements in irons, toasters, grills, etc., and the installation of new cords and connecting plugs on a unit price basis.
    This will encourage "one time" customers to become "repeat" customers and expose them to the other items that are for sale.
12. Obtain "stuffers" describing special items and include these when wrapping packages (these can usually be obtained gratis from the Manufacturer).
13. Mailing lists—these can be developed by recording each customer's name and address and telephone number and sending periodical mailings—listing seasonal items, such as fans, heaters, Xmas tree bulbs, appropriate "gifts" for anniversaries, holidays, etc.
14. Any check lists of the customer's present or future requirements should be made in duplicate so that a "tickler" or reminder copy is on file in the department.

PRACTICAL TECHNICAL DATA FOR SALESMEN

Each room in a home requires study to determine the most appropriate locations for switches, lighting outlets and convenience outlets. Although this spacing arrangement is not a part of the salesman's duties, he should become familiar with generally accepted practices so that he can intelligently discuss points with his customers. For example:

1. Switches, on lock side of door, are located approximately 48" from floor line.
2. Convenience outlets are located near the ends of wall spaces and approximately 18" from the floor.
3. Special purpose outlets for kitchens, etc., are located approximately 43" from the floor.
4. Unbroken wall spaces—one outlet should be placed so that no point along the floor line is more than six feet from an outlet.
5. Walls broken by doors—each wall space of three feet or more should have an outlet.
6. Halls—one outlet each 15 lin. ft. (switch controlled).
7. Stairs—one outlet on each floor (multiple switch controlled).
8. Recreation room—one ceiling outlet per 150 sq. ft. of area.
9. Basement—one ceiling outlet per 150 sq. ft. of area.
10. Porches—one ceiling outlet per 150 sq. ft. of area.
11. Terraces and patios—one wall outlet per 15 ft. of house wall.
12. Kitchens—one outlet per 4 lin. ft. of work surface or counter area.

SUPPLY SERVICE: WIRING

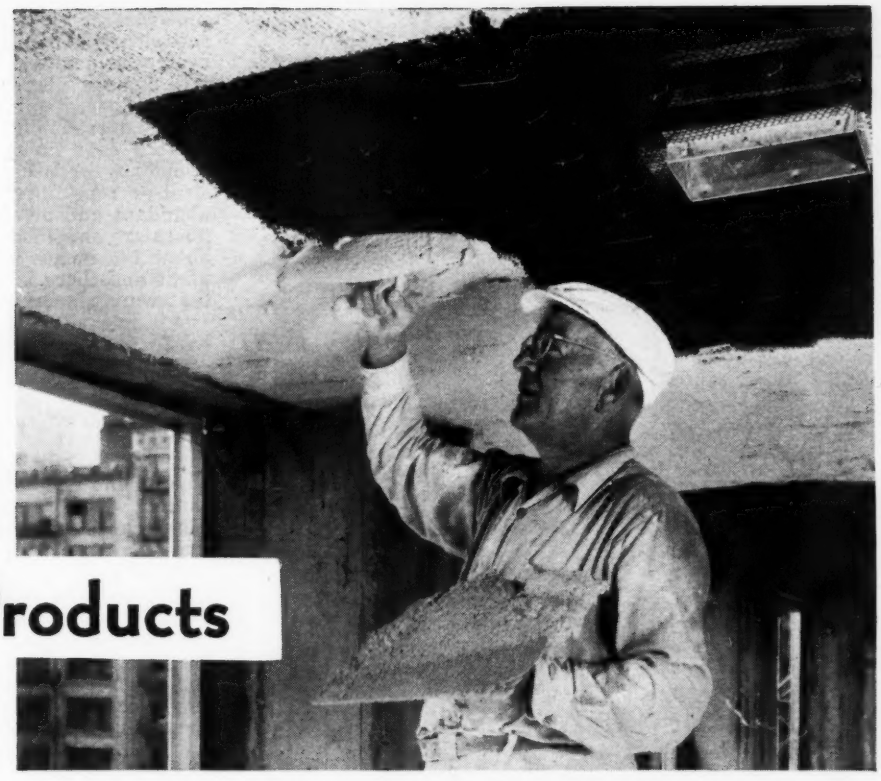


This diagram illustrates general principles of a wiring layout only and is not intended to be used as a detailed installation guide.

THE WIRING SYSTEM

MAJOR ELEMENTS OF A RESIDENTIAL WIRING SYSTEM

1. SERVICE — Main Highway
2. METER — Toll Station
3. MAIN DISTRIBUTION CABINET
4. SUB FEEDERS — Main Roads
5. RANGE CIRCUIT — Main Road
6. WATER HEATER CIRCUIT — Main Road
7. BRANCH CABINETS
8. BRANCH CIRCUITS — Side Roads
9. CONVENIENCE OUTLET
10. LIGHT OUTLET
11. WALL SWITCH
12. SPECIAL OUTLET
13. OTHER CIRCUITS NOT ILLUSTRATED



Section 19

Plaster and Plastering Products

THE WIDESPREAD POPULARITY of plaster and plastering products in all types of construction makes them of primary importance to the retail building products dealer; and as such they are a major factor in his merchandising program.

This section outlines the many uses and applications of plastering products to help the dealer take full advantage of the potential offered by these materials, and to be familiar with their many uses and applications.

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Specific Purpose Plasters 435
Plaster Base 440
How to Handle this Merchandise 444
Sales Tips and Estimating 445

PRODUCT DESCRIPTION, DEVELOPMENT, USAGE

Plaster, as commonly understood, consists of a plastic mortar mixture applied as a surface treatment either to the interior or exterior. In fact, plaster has many of the attributes of plastics, since it is shaped and formed while wet and can be made to conform with an infinite number of styles, surfaces and lines.

(A brief description of some of the advantages of lathing and plastering is found in the booklet, "What You Should Know About Modern Lathing and Plastering," published by the National Foundation for Lathing and Plastering, Inc., Chicago.)

Plaster Composition

There exists a sharp division between the two primary classes of plaster composition based on the cementing material and, because each of these two possess specific qualities which make their use for certain treatments mandatory, they will be treated individually in the following paragraphs.

One group of the cementing materials used is classified as gypsum and processed for various requirements in a large number of brand identifiable packages.

The other cementing material is portland cement which is likewise manufactured for various requirements and sold in innumerable brand identifiable packages.

There is a third cementing material used in plaster which, due to its physical properties and also due to the development in the processing of gypsum and portland cement, has declined in use in plastering and today is used primarily as a finished material or an admix with one of the other two cementing materials to improve plasticity in certain conditions.

Lime is available on the market either hydrated or quick, packaged or in bulk. It likewise is processed and packaged with many identifiable brand marks.

Space does not permit the inclusion of the historical development of either gypsum, portland cement, or lime. However, it can be most definitely stated that the continuous painstaking research conducted by the Industry Institutes as well as the technical laboratories maintained by individual manufacturers has resulted in the production of an excellent group of building industry products which, if properly selected and used in accordance with either American Standards Association—Standard Specifications for Gypsum Plastering, including Requirements for Lathing and Furring, A42-46, or individual manufacturer's specifications, will provide lasting consumer satisfaction.

Plastering Considerations

In plastering it is necessary to (a) have the plaster bond to the base, (b) cover all irregularities and secure a true and level surface, and (c) obtain a smooth, clean, hard surface that is pleasing in itself or can be further decorated with paint, enamel, calcimine, or wall paper. Wet, unset plaster is weak and so if applied in too thick coats will slide on the side walls and drop from the ceiling. Further, heavy coats give rise to shrinkage and drying problems.

Two and Three Coat Work

These considerations make so-called two and three coat work necessary. Three coat work as the term implies means three separate coats. The first is called the scratch coat, the second the brown coat, and the third, the finish coat. In three coat work, the scratch coat is raked and cross raked before setting. It is allowed to set and become nearly dry before the brown coat is applied.

In two coat work, the base coat plastering is applied in such a manner as to be considered one coat, and the finished coat applied to this is considered the second coat. The base coat may be applied either by troweling on the base coat plaster to the full thickness of the plaster grounds at one time, striking off of the rod and darbying;

METAL lath attached to wood studs in typical house construction.

or by a **double-up** method in which the plaster is scratched onto the lath base and the plasterer immediately comes back over the wet, unset scratch coat with a second application, filling the plaster up to the full ground thickness, then striking off with a rod and darbying preparatory to the finish coat.

The scratch coat's primary purpose is to bond to the plaster base, providing a good base for the succeeding work. The brown coat, having a good base in the scratch coat, is inserted to build up the surface, making it true and level. The finish coat provides a pleasing surface of good wearing qualities.

Base coat plasters used for scratch and brown coats include the following: neat gypsum, fibered and unfibered; ready-sanded gypsum plasters; wood-fiber gypsum plaster and bond plaster.

Job conditions usually determine whether the work should be done by the two-coat or three-coat method, but more important than the number of coats is that the plaster shall be of adequate thickness.

Minimum thickness recommended for lath bases including gypsum, fiber, etc., is one-half inch; for masonry bases ⅝ inch; for metal and wire lath, and wire fabrics ⅝ inch; while for monolithic concrete ceilings the minimum thickness is ⅛ inch and the maximum thickness ⅜ inch.

GENERAL TYPES OF PLASTER

Cement Plaster

Neat gypsum plaster is the most common form and is generally sold and spoken of by the trade as "Cement Plaster." Gypsum plaster provides a harder surface than lime plaster giving rise to another name for this material—"hardwall" plaster. It is mill retarded and normally sets in three to six hours when mixed with sand and water on the job. In the past all plaster was fibered, having animal hair in it. This fibering helped the workability slightly, but of more importance, increased the cohesiveness of the material helping to maintain the keys until the plaster set, particularly when the plaster was applied over open mesh lath. Fibering was essential in lime plaster which took weeks to harden. With the faster setting gypsum plaster fibering is not so essential. However, specifications vary on this point and many architects still call for fibered plaster, so the manufacturers furnish either fibered or unfibered plaster. Because of the open mesh, fibered plaster is always recommended for the scratch coat on metal lath. Originally fiber was made from cow or other animal hair. Experience has proved sisal or rope fiber equal to animal hair; as sisal is more abundant and more uniform, it has become standard. The fibers are shredded before mixing with the plaster and are about 1½ inches long. It is mixed very thoroughly at the plant and there is little or no danger of the balls of fiber that were a source of annoyance to plasterers in the past.

Ready Sanded Plaster

Ready sanded gypsum plaster is produced in the mill requiring only the addition of mixing water in the field. Carefully dried sand of good quality is mixed in the required proportion with neat gypsum plaster and retarder at the mill and bagged. Ready sanded plaster is desirable where sand is scarce or of very poor quality or for use in winter weather when sand is often frozen. Practically speaking it is the same material as cement plaster with the aggregate added at the factory.

Since ready sanded plaster definitely is a preventative of adulteration and weakening of the plaster, those dealers who are equipped to merchandise ready sanded plaster or even to mix it in their own plant for delivery in bags to the job, should acquaint the architects, builders and prospective home owner with this fact. They should emphasize time saved on the job and the greater assurance of getting the finest types of plastering jobs.

Wood Fiber Gypsum Plaster

Wood fiber gypsum plaster is a specially prepared gypsum plaster containing not less than 1 percent of a fine non-staining wood fiber. It is designed for use without an aggregate. Fibering was essential in lime plasters for added strength. These take a considerable time to harden. Fibering is not necessary, however, in fast setting gypsum plaster.

Both types are supplied by the manufacturers. With open mesh lath as metal and wire lath, fiber plaster will assist by minimizing droppings.

VERMICULITE

Vermiculite is a non-metallic mineral of the mica family which is mined in Montana. The ore is dark brown and flaky in structure. When heated to high temperatures it explodes into cellular granules. Vermiculite is light in weight and has high insulation qualities. (See Sections, Insulation, Cement and Masonry.)

It has become popular for use instead of sand in plaster, for uses where insulating, fireproofing; and acoustical qualities are desired. It is adaptable to any type of finish or surface treatment.

Materials required to plaster 100 square yards ⅛ inch thick:

Mixing Proportions	Number of 100-lb. Bags of Plaster	Number of cu. ft. of Vermiculite Aggregate
1 to 1½	3¾ Bags	5⅝ cu. ft.
1 to 2	2⅓ Bags	6⅔ cu. ft.
1 to 2½	3 Bags	7½ cu. ft.
1 to 3	2⅝ Bags	8 cu. ft.
1 to 3½	2⅜ Bags	8⅓ cu. ft.
3 to 4	2⅛ Bags	8½ cu. ft.

The thickness of any plaster coat can be estimated to be some multiple of ⅛ inch, hence the quantities above would have to be multiplied by the estimated thickness of the plaster coat. Also, as this rule is for solid surface, openings would have to be discounted.

For example, where a masonry wall is to be plastered to ⅝ inch grounds using a mix of 100 lbs. gypsum to 3½ cubic feet vermiculite. the quantities required to cover 100 square yards will be:

Plaster required: 5x2⅜ equals 12 Bags.

Vermiculite Plaster Aggregate: 5x8⅓ equals 42 Cu. Ft.

The chart below shows the materials needed to plaster 100 square yards ⅝ inch thick over gypsum lath.

Scratch Coat	Brown Coat	Trowel Finish Coat
Mix:	Mix:	Mix:
1 bag gypsum to 2½ cu. ft. Vermiculite	1 bag gypsum to 3½ cu. ft. Vermiculite	1 bag gypsum to 1½ cu. ft. Vermiculite
Use:	Use:	Use:
6 bags gypsum 3¾ bags Vermiculite	4¾ bags gypsum 4 bags Vermiculite	3¾ bags gypsum 1½ bags Vermiculite

SPECIFIC PURPOSE PLASTERS

Bond Plaster

For applying plaster directly to concrete surfaces a bond plaster is available capable of forming a strong bond on concrete to which regular gypsum will not adhere. This is accomplished by special admixes and specialized formulation at the mill. However, it is important in any event that the concrete surfaces be free from oil and, in general, it is advisable that poured concrete surfaces be roughed or provided with other mechanical key for the plaster. In either case, the use of the bond plaster is recommended.

Finish Coat Plaster

Plasters designed for finish coat work include gauging plasters, gypsum prepared finishes, Keene's cement, acoustical plasters and moulding plasters.

Gauging plasters are designed for use with lime putty on the job and may be slow set or fast set as desired. The most common finish usually referred to as the "white" coat is one part gypsum gauging plaster to three parts lime putty by volume. This is applied in a very thin coat frequently specified as ⅛ inch thick. The lime gives the material whiteness, plasticity, and long working properties. The gypsum by setting gives a hard surface quickly and counteracts the shrinkage in the lime. Fast setting gauging plaster is normally a finely ground, high purity gypsum plaster with no retarder or accelerator. Slow setting gauging plaster has had a mill mixed retarder in the gypsum plaster of paris.

Gypsum prepared (trowel) finishes are mill mixed, finely ground and contain other materials to provide proper workability and application properties. Only water is added on the job for use and the finishes may be obtained in several colors as well as white. It can be steel trowel finished for a smooth finish or sand floated. Gypsum, due to its setting characteristics cannot be trowelled indefinitely.

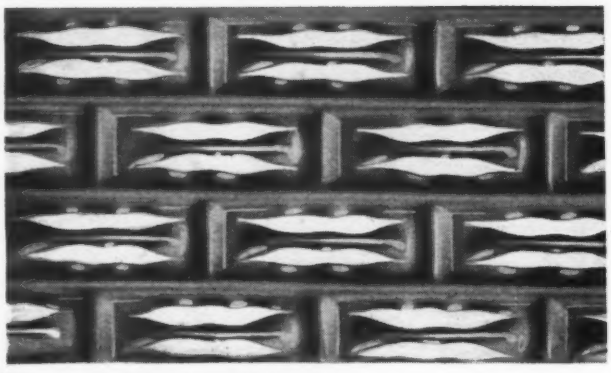
Keene's cement is made from gypsum rock by burning the crude ore to a high temperature, grinding and accelerating.

High temperature calcination removes all water of crystallation converting gypsum into the insoluble anhydrite, $CaSO_4$, chemically identical with the mineral anhydrite which frequently occurs in gypsum deposits. Insoluble anhydrite sets very slowly with water (may require months or years) but by fine grinding and with the addition of acceleratures (usually alum) it will set in the same manner as hemihydrate plasters ($2CaSO_4.H_2O$). Keene's cement may be used alone or with lime putty mixed in the proportions of three parts Keene's cement to one part lime putty by volume and when heavily trowelled produces a very hard, dense surface. Scagliola (artificial marble), artificial travertine finishes, etc., are usually made from Keene's cement. Such finishes are highly polished.

PLASTER TROUBLES AFTER APPLICATION

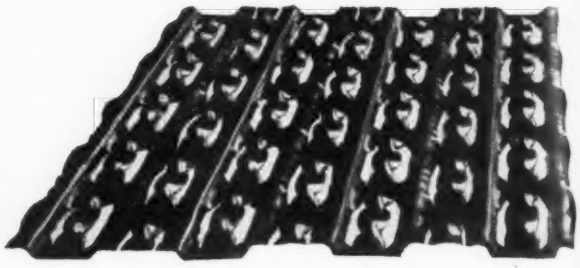
IF PLASTERED WALL IS:	THE TROUBLE IS:	REMEDY:	TO PREVENT TROUBLE IN FUTURE:
Soft, white, chalky particularly over openings. Hot weather condition.	"Dry Out." Plaster dried before setting.	Spray walls with clean water. Keep wet till set.	Screen openings. Wet lath and floors. Avoid thin coats. If plaster slow set use accelerator.
Damp. Soft. Winter condition.	"Sweat Out." Plaster holds water and "rots."	After plaster is set open doors and windows. Supply heat.	Allow ventilation to hasten drying after plaster is set. Supply artificial heat in cold weather.
Soft, resembling sweat out—rooms have been at freezing temperature.	Walls are frozen.	Throw open building. Let walls freeze dry.	Keep walls from freezing until plaster is dry or at least 24 hours.
Soft, not due slow set or hot weather or retempering plaster.	(1) Too much sand. (2) Too fine sand.	None.	(1) Measure sand accurately. Do not use over 3 parts by weight. (2) Use other sand.
Wood lath. Cracks or bulges horizontal with lath. Straight vertical cracks.	Due swelling poor grade of lath or improperly spaced or failure to wet down. Failure stagger joints.	Remove and replaster.	Use No. 1 lath, white pine, cypress or spruce free from bark, sap, or knots. Space ¼" to ⅜" apart. Stagger. Wet lath before plastering.
Gypsum lath. Cracks around joints.	Too thin coat.	Apply second coat.	Use proper grounds.
Metal lath. Sags, cracks, does not adhere.	Too light lath, too open spaces, plaster not double fibered. Plaster over sanded.	Reapply.	Correct conditions mentioned.
Brick or tile. Small cracks.	Failure wet before plastering. Too little sand. One coat work.	Float crack or apply more plaster.	(1) Wet tile before plastering. (2) Use 3 parts sand. (3) Two coat work.
Concrete. Poor bond.	Use of improper plaster. Unprepared surface.	Remove loose plaster. Condition wall. Apply bond plaster.	Surface must be rough, clean. Use concrete bonding coat.

Bostwick COMPLETE LINE OF METAL LATH and . .



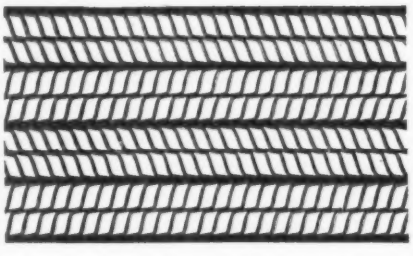
SUPER BOSTWICK TRUSS-LOOP

Here is an all purpose lath for use in wood or steel construction. It saves labor, yardage, furring, lumber, plaster, and time. Bostwick Truss-Loop is exceptionally rigid under the plasterer's trowel and because of its stiffness, wider spacing of studs and joists is permissible. These advantages are obtained because of longitudinal and lateral corrugations. Tile setters also prefer this lath. Weighs 4½ lbs. per square yard; made in 24" x 96" sheets, 9 sheets per bundle (16 yards).



BOSTWICK CHANNELFORM

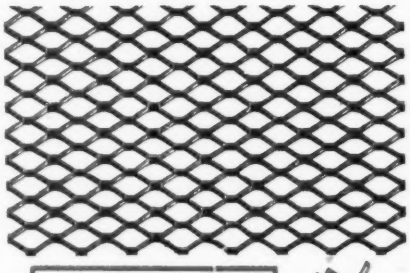
Bostwick Channelform Lath, made on the same excellent principle as Truss-Loop, has lateral channel-like formations. Thus, by adding greater rigidity to the already stiff Truss-Loop lath, Bostwick offers the latest design in lath for light slab construction. Not only does the contractor have minimum sag but he also has a minimum of grout losses. Furnished in 4.5, 6.0, and 6.75 lbs. per square yard . . . 24"x96" sheets, 9 sheets per bundle (16 yards).



BOSS-RIB METAL RIB

Here's a general purpose, plaster saving lath, with longitudinal flat ribs fabricated in an oblique position. Having between 4% and 5% more openings than a Junior Mesh Lath plus the plaster saving feature and self-furring advantage, Boss-Rib permits better plaster key and a rigid plaster base.

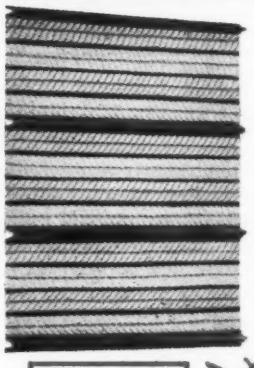
Sheets 24"x96" weigh 2.75 and 3.4 lbs. per square yard, have 9 sheets (16 square yards) per bundle.



JUNIOR EXPANDED LATH

Here is a lath which is widely accepted in commercial, apartment, and home construction. Bostwick Junior Mesh Lath provides a uniform key for the plaster. Every dealer should have a stock of Junior Mesh in both painted and galvanized.

Furnished in 24" x 96" sheets, 9 sheets and 16 yards per bundle; also in sheets 27" x 96", 10 sheets, 20 yards per bundle—weighs 2.5 and 3.4 lbs. per yard in copper alloy steel painted . . . only 3.4 lbs. lath in galvanized.

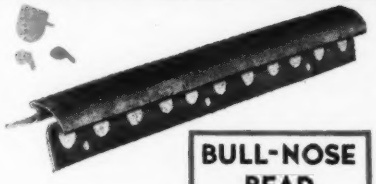


RIB LATH

Bostwick ⅜" Rib Lath is used for plaster base on wide spacing and for reinforcement in floor and ceiling construction with steel joists. Furnished 3.4 and 4.0 lbs. per yard; 9 sheets per bundle; sheets 24" x 96". Bostwick ¾" Rib Lath is for floor and roof construction. Furnished .60 and .75 lbs. per sq. ft., lengths 8, 10, and 12 feet, sheet 29" wide.

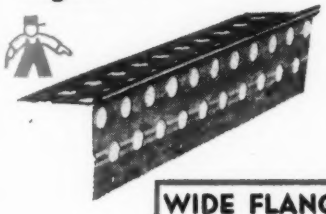
Sell BOSTWICK and you Sell the Best

Bostwick METAL LATH ACCESSORIES



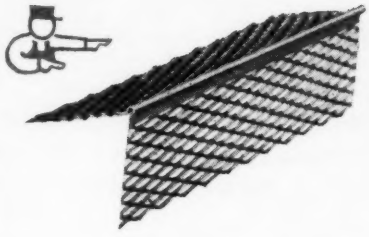
BULL-NOSE BEAD

Provides a strong, rounded corner with true radius. Furnished in 7, 8, 9, 10, and 12 ft. lengths.



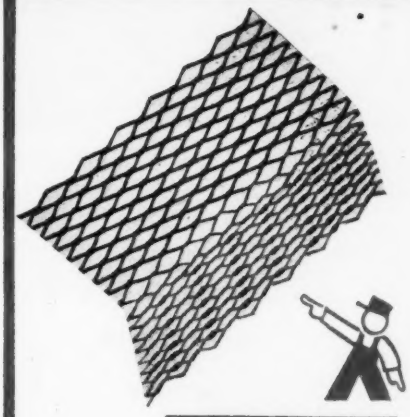
WIDE FLANGE BEAD

With wings 2½" wide, it provides exceptional rigidity and facilitates erection on masonry corners. Lengths 8, 9, 10, and 12 ft.



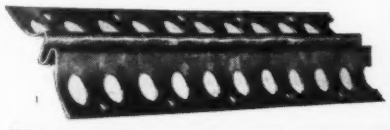
EXPANDED WING CORNER BEAD

Expanded bead, preferred by many craftsmen, has wings 2½" wide, smooth true nose, and offers extra reinforcement for plaster with its diamond mesh type wings. Furnished 8', 9', 10', and 12' lengths and packed in strong cartons or crates.



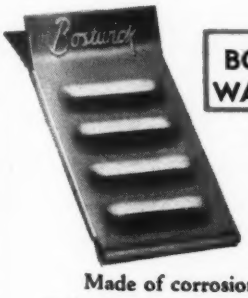
SMOOTH EDGE CORNERITE

Used for inside corners over any plaster base, it prevents plaster cracks. Having smooth edges, it is easy for plasterers, lathers, and dealers to handle. Furnished in 2" x 2" x 96" and 3" x 3" x 96", packed in 400' bundles.



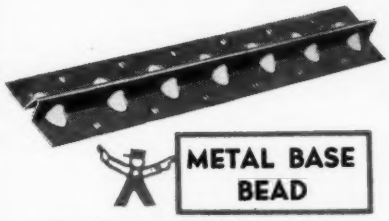
CONCEALED PICTURE MOLDING

Concealed in plaster . . . only straight line of picture slot can be seen. Used in formal rooms, studios, and galleries. Made in 10' lengths, 500' per crate.



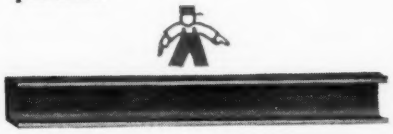
BOSTWICK WALL PLUG

Made of corrosion resisting galvanized steel, a positive nail grip in masonry walls. 2⅞" long, 2¼" wide, 250 pieces per carton.



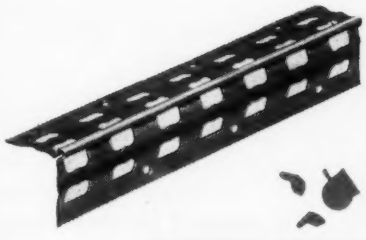
METAL BASE BEAD

Provides a screed between plaster and base . . . made for ½" ground, it can be shimmed out to any depth of ground. Length 10', crated 500' per crate.



COLD ROLLED STEEL CHANNELS

Made of hot rolled strip steel and cold formed . . . it has ½" legs . . . it is true and square. ¾" and 1½" sizes in 16' and 20' lengths. ¾" tied 20 pieces per bundle . . . 1½" tied 10 pieces per bundle.



TRUSS-WING CORNER BEAD

For years Truss-Wing Bead has been an outstanding dealer favorite because (1) it is best for arches and straight work (2) it is suitable for any depth of ground (3) it is adaptable to the use of corner bead clips where wider nailing is required (4) is packed in a strong carton which keeps the bead in good shape while in transit and in stock. Furnished in 8', 9', 10', and 12' lengths.

THE BOSTWICK STEEL LATH COMPANY
NILES, OHIO

Acoustical plaster is a special gypsum plaster which when properly mixed and applied has the faculty of absorbing sound within a room thus reducing sound reverberations. All such plaster is made by patented processes and contains a light weight porous material as a filler plus a small amount of some chemical that creates air voids in the finished product which entrap the sound waves. In the past a successful job depended to a major degree upon the plasterer's skill in application and the acoustical properties of ceilings were ruined by excessive trowelling which made a dense solid surface. Present manufacturing processes have reduced this hazard so that the successful application of the acoustical material today is almost as easy as that of other good finishes.

Moulding plaster is a high purity finely ground plaster generally of much faster set (25 to 40 minutes) than the other plasters described. It is designed for general casting work and is often employed for cornices, run work, and staff or in ornamental plastering. Its high strength, good white color and uniformity are of importance in such applications.

Retarders and accelerators—Manufacturers have also

TABLE I

Example of Two Story Six Room Dwelling
Foundation size 24'0"x30'0"
Typical Plaster Quantity Take Off

Floor	Name of room	Size	Ceiling Height	Sq. Yds.	No. of Bundles Wood	Gypsum	Metal
1st	Living room	14'x18'	8.6"	88.4			
	Dining room	14'x12'	8'6"	67.7			
	Kitchen	10'x11'	8'6"	51.8			
	Lavatory	5'x6'	8'6"	24.1			
	Hall	4'x6'	8'6"	21.5			
	Entrance	6'x7'	8'6"	29.2			
	Stairwell	3'x9'	8'6"	25.6			
	Closets	3'x6'	8'6"	19.0			
	Total 1st floor—			327.3	46.0	94	16.4
2nd	Bedroom 1	13'x14'	8'0"	68.2			
	Bedroom 2	13'x15'	8'0"	71.4			
	Bedroom 3	10'x10'	8'0"	46.6			
	Bath	7'x6'	8'0"	27.7			
	Hall	3'x14'	8'0"	34.8			
	Closets (2)	3'x10'	8'0"	26.4			
	Closet (1)	4'x6'	8'0"	20.4			
	Closet (1)	3'x6'	8'0"	18.0			
	Total 2nd floor—			313.5	44.0	90	15.6
	Total 1st and 2nd floor—			641.	90.0	184	32.0
	Basement (clg. only)	24'x30'		80.0	12.0	23	4.0

TABLE II

To convert plaster support or plaster "base" to nearest unit—as customarily packaged—for *100 sq. yds. and also *100 sq. ft.

— BASIS —

Name	No. pcs. per bundle	Size of unit	Bundle will cover *sq. yds.	sq. ft.
Wood lath	100	1⅝"x48"	7.1	64
Gypsum or "rock" lath	6	16"x48"	3.5	32
**Expanded metal lath	10	27"x96"	20.0	180
**Expanded metal lath	(per sheet)	27"x96"	2.0	18

— INSTRUCTIONS —

1. Enter room sizes in column—(as shown on Table No. 1).
2. Select table for ceiling height, which applies from sq. yd. Tables on pages 000—and place number of sq. yds. in column as shown.
3. Arrive at total sq. yds. by adding this column.
4. Divide total sq. yds. by number of sq. yds. contained in each bundle to find total bundles required.
5. Always figure to next larger number of bundles when arriving at totals.
6. To convert to sq. ft. divide sq. yds. by 9.

*Custom varies considerably. Many figure plaster per square yard while others compute in square feet.
**In many cases, where limited amounts of metal lath are required, dealer may furnish number of sheets needed for a special application.

LET THE NAME CELOTEX MAKE YOUR SELLING JOB EASIER

REG. U.S. PAT. OFF.

FOR *Plastering*

CELOTEX INSULATING LATH: A triple-purpose, cane fibre material that: (1) Has a surface texture that grips and holds plaster securely; (2) Adds strength to the building; (3) Furnishes highly efficient insulation. Made with specially-designed edges that give reinforcement at all joints — providing a strong, continuous base for plaster.

CELO-ROK ANCHOR LATH: A modern plaster base that insures smooth, strong walls and ceilings — at moderate cost. Its core of fireproof gypsum rock is encased in a special heavy fibre sheet that bonds readily with plaster. The rigid panels, when nailed to framing, add strength to the construction . . . and present a smooth, solid base for the application of plaster. Celo-Rok Anchor Lath will not warp or shrink. Available in two types — *plain* and *perforated.*

CELO-ROK PLASTERS: A complete line of highest grade gypsum plasters. "Climatized" by a special process to give best service for the atmospheric conditions of the locality where they are to be used.

THE CELOTEX CORPORATION, CHICAGO 3, ILLINOIS.

CELOTEX

REG. U.S. PAT. OFF.

Building Products

CELO-ROK, trademark, REG. U.S. PAT. OFF.

developed chemical compounds, which, when added to the gypsum plaster, will either retard the time of setting or hasten it according to the requirements of the job.

PLASTER BASE

This highly important part of a good plaster job has by reason of custom expediency, economy, zone regulations, availability and functional purposes, been divided into these broad classifications:

1. Wood lath or woven reed (primarily in foreign use).
2. Metal lath—flat-expanded, ribbed or sheet.
3. Wire lath (woven or welded, including wire fabric).
4. Gypsum lath, plain, perforated or insulating.
5. Masonry—brick, stone, hollow tile, cement block, gypsum tile.
6. Concrete.

Of these masonry plaster bases are the oldest examples dating back as much as 4,000 years.

Wood Lath

Wood lath is or was primarily prevalent in North America. The abundance and low cost of lumber made it an economic and durable plastic support.

With the rapidly increasing use of lumber for other more profitable applications, two substitutes or replacements as plaster support made an appearance, namely, gypsum lath and an expanded metal or wire fabric.

Gypsum lath and metal at present dominate the market due to product development; also because plastering applied on these incombustible bases provides a higher degree of fire resistance for sections such as partitions and ceilings where fire resistance is required by code. The use of wood lath, due to a combination of many factors, is fast disappearing.

Gypsum Lath

The gypsum industry has developed a most useful unit in gypsum lath—economic, highly fire resistant, ease in application on interior surfaces, engineered size to minimize cutting waste, rigidity to a degree that reinforces the structural strength of the wall or ceiling to which it is applied, excellent bonding qualities with gypsum plaster but require refinements. The application of a metal foil to plain gypsum lath makes an excellent vapor sealed barrier and heat insulating unit.

Another most efficient structural unit which, when erected, provides both a rigid partition and an excellent plaster support is "Gypsum Tile" or "Gypsum Block." This unfinished unit is manufactured in various sizes and comes either solid or hollow. When employed in the division of areas in loft, commercial, institutional, apartment, and hotel structures, it affords a most elastic and flexible means towards convenient floor space distribution. Light in weight, highly fire resistant and simple to erect (it is easily cut and fitted), it results in an ideal plaster support and likewise combines the elements of low initial cost; the features of temporary expediency or of permanency. Because of these many desirable qualities, it is widely used in the industrial and commercial field.

Metal Lath

Metal lath manufacturers have made tremendous strides in the manufacture of expanded metal lath in various weights, mesh design, stiffening ribs, galvanized and black-painted, each of which are "tailored" to serve a specific purpose. These various types are adaptable for general plastering needs, for special formed work and designs, for use where self-furring lath is required, for use as reinforcement, to serve as forms in concrete floor work, etc. Metal lath is available in various sizes and weights in the following forms: flat expanded diamond mesh (galvanized or black-painted) and flat rib, ⅜ inch or rod-stiffened rib, ¾ inch rib, and sheet lath (black-painted). In manufacturing, metal lath is made from copper alloy or galvanized steel sheets which are slit and expanded, or slit, punched or otherwise formed, with or without partial expansion.

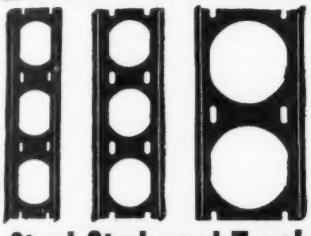
The metal lath manufacturers, as well as gypsum lath manufacturers, have also developed partition systems which include not only the lath but also may include

THE BROWN coat is being installed (left, above). Photo at the right illustrates application of the finish coat. The title picture of this section shows the first, or scratch coat being applied over metal lath.

THE TRUE BLUE LINE OF QUALITY

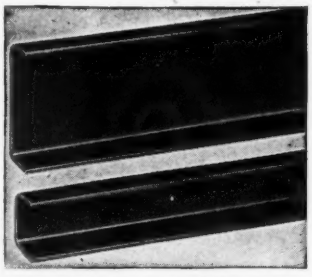
Metal Lath and Plastering Accessories

METAL MARK Penmetal 1869 OF QUALITY



Steel Studs and Track for Hollow Partitions

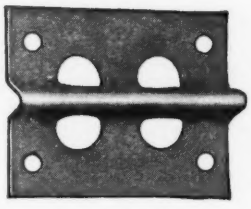
3¼" for 4½" partition; wt. 575 lbs. per M lin. ft.
4" for 5¼" partition; wt. 650 lbs. per M lin. ft.
6" for 7¼" partition; wt. 880 lbs. per M lin. ft.
Lengths 8' to 20'.



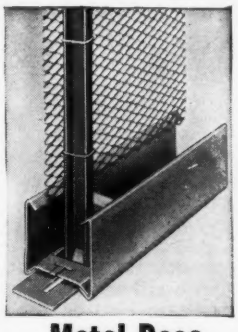
Cold Formed Channels

¾" 16 ga. 300 lbs. per M lin. ft.
1½" 16 ga. 475 lbs. per M lin. ft.
Furnished 16' or 20' Lengths. Painted only.
¾" packed 20 pieces per bundle.
1½" packed 10 pieces per bundle.

½" Grounds Standard Base Screed



10 foot lengths.
Weight 185 lbs. per 1,000 lin. ft.
Packed 1,000' per package.

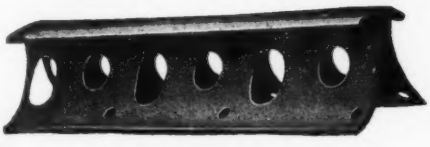


Metal Base

For 2" Solid Partitions, Furred Walls and Masonry Walls.

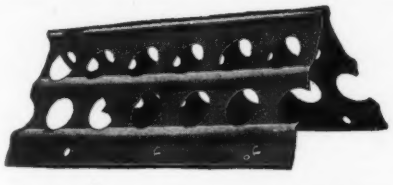
Standard Wing Bead

The most widely used type of corner bead for straight, arch and window work.
1⅝" flange. Standard lengths 8, 10 and 12 feet.



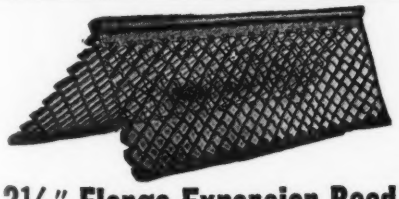
Standard Bull Nose Corner Bead

¾" radius, 1⅝" flange. Standard lengths: 7, 8, 9, 10 and 12 feet.



2½" Wide Flange Corner Bead

Standard lengths: 8, 9, 10 and 12 feet.



2½" Flange Expansion Bead

Standard lengths: 8, 9, 10 and 12 feet.

WHY DEALERS SHOULD CARRY *Penmetal* LATH IN STOCK

1 PENMETAL Lath is the only metal lath that is painted singly, one sheet at a time. Paint is baked on by special INFRA RED RAY process. You will like its appearance and so will your trade.

A bright painted bundle of metal lath is durable. It looks well on your trucks and in your warehouse stock, and has the proper protection until it reaches the plastering stage.

2 For easy handling, figuring and bookkeeping—all PENMETAL Lath, including Diamond Mesh Lath (Meshtex), ⅛" Rib Lath (Durabond) and ⅜" Rib Lath (Masterib) is manufactured in sheets 27" x 96"—2 square yards per sheet—20 square yards per bundle.

3 Each sheet is trimmed square at each end separately, sheet by sheet. When metal lath is trimmed in bundles the top and bottom sheets are distorted and bent on the edges, causing an impediment to the plasterer's trowel.

Write for complete catalog and details on Penmetal Dealerships.

PENN METAL COMPANY, INC.

General Sales Offices: 205 East 42nd Street, New York 17, N. Y.

District Sales Offices: Boston, New York, Philadelphia, Chicago, Detroit, Indianapolis, Seattle, Los Angeles, San Francisco, Dallas, Parkersburg, W Va.

Factory: Parkersburg, W. Va.

ALL CORNER BEAD AND SCREED MADE FROM 26 U. S. STANDARD GAUGE, TIGHT-COAT GALVANIZED

QUALITY PRODUCT *Penmetal* EFFICIENT SERVICE

special types of metal studs designed specifically for this purpose.

For use in solid plaster partitions, the studs may be ¾ inch plastering channels, although in the case of two inch plaster partitions made on the gypsum lath base, the channels are usually omitted and a special type of gypsum lath core runs continuously from floor to ceiling. These types of thin partitions are being used in increasing quantities in buildings used for multiple occupancy; apartments and hotels, for example, also one-story dwellings where the load of the ceiling is carried on trusses or truss rafters extending from wall to wall.

The metal lath manufacturers have also developed a series of special studs for hollow partitions. These studs, with the metal lath and plaster, provide very satisfactory fire retardance and also facilitate the concealment of ducts and pipes, etc.

In addition, the industry has developed a variety of plastering accessories in the form of standard units which serve to ease the wear and tear on plastered areas, such as corner beads, picture mold insert strips, corner reinforcements and flat strip sections which serve to strengthen the resistance to corner and surface cracks where either wood lath or gypsum lath is employed as the main plaster support. Grounds or screeds, numerous clips and ingenious fasteners for application of metal lath to metal framing members, including metal partition studs and partition systems, are available.

The industry has also developed wire fabric which is stitched to a backing membrane of highly absorbent fiber, and a wider spacing of the reinforcing wire is permitted as a result of this backing membrane being attached to the wire. When the spacing of the wire is small the lath is properly called wire lath, and no backing membrane is required for use with this type lath.

HOW TO HANDLE THIS MERCHANDISE

Because of their common affinity for water and the resultant deterioration of the product, gypsum, portland cement, and lime (either hydrated or quick) should be stored where it is possible to keep them dry; and, if possible, protected by suitable enclosures to resist dampness.

Manufacturers have greatly contributed to minimizing the spoilage of these materials by using an improved container which is water repellent to varying degrees.

Keep Gypsum, Portland Cement, Lime Dry

Nevertheless, appropriate precautions should be taken by the retail dealer to minimize inventory shrinkage by elevating the storage floors to at least truck platform level. This arrangement will serve a two-fold purpose, i.e., keep the merchandise dry and provide for easy loading.

As these materials are bulky and heavy and are purchased in carload lots, ease of unloading and storing is also a desirable feature; and it is strongly recommended that the warehouse or storage space be located close to the siding or track (if any) in order to effect the most convenient manner of stock transfer from the car to the warehouse.

Lime is furnished in 10 and 50 pound bags as compared to 92 and 100 pound bags for other material, with the result that it is easier to handle. Bagged lime storage should have smooth walls and floors to prevent snagging. Handling of bagged lime is similar to handling other bagged building materials.

Gypsum plaster board or gypsum lath is efficiently bundled by the manufacturer. Usually it is furnished in paper taped units of six sheets 16x48"; and is, therefore, simple to handle, store, load, and use on the job. It, too, should be stored in a reasonably dry place but it does not have the same susceptibility to dampness as the cementaceous products.

Metal lath presents no serious storage problem except that the different gauges, weights, and finishes should be placed in separate piles.

Corner beads and related accessories preferably should be "stood on end" to afford quick access and selection.

Certain types of wire fabric, used as a plaster base, are merchandised in rolls.

Some dealers find it advantageous to use roller conveyors for moving gypsum lath from the car to the warehouse floor.

Sand

Sand—one of the highly necessary parts of plastering (either with gypsum or cement) should be (if siding facilities and yard space permits) stored in an elevated bin similar to a "silo" to afford easy loading; otherwise, a belt conveyor or similar labor saving device should be employed.

Under normal conditions, only two kinds of sand will be required; one the regular or "builder's" sand; the other, "white" or "beach" sand. The latter, which is only used for sand finish or decorative stucco, is best merchandized in bags.

If sand, as such, is a problem either from a storage, truckage, or source viewpoint, many retail dealers divert these orders to someone who has specialized in the sand and gravel supply business. The dealer, however, controls the sale and realizes his operating profit just as he would if he carried sand in stock.

***APPLICATION** of stucco to exterior of house is shown above. Wire mesh is installed first, using special furring nails that keep mesh at proper distance from wall and insures uniform thickness of the scratch coat.*

SALES TIPS AND ESTIMATING

Interior Plastering

On a new house job interior, assist the customer in estimating the amount of material he will require to finish the job, as follows:

1. **The amount of plaster support or "plaster base"**—this can conveniently be determined by checking the plan for room, closet, hall, and stairway dimensions and by placing these in a column on a sheet and converting the dimensions into square feet or square yards by reference to the tables provided—(refer to typical example on Table No. 1).

2. **Help the customer to select the most appropriate plaster support**—this should preferably be the one the firm carries in stock, account of expediting delivery to the job.

The quantities of either wood, gypsum, or metal lath will be about the same in square feet; yet, because of the variance in surface content of the packages themselves and because the orders are usually prepared to list bundles or packages or sheets, the conversion Table No. II has been provided for the salesman's use.

It has been developed to help him find the quantities to the nearest larger bundle, package, or number of sheets.

By reference to the typical example of a dwelling showing how dimensions were "taken off" on Table No. 1 and by reference to conversion Table No. II, we discover that this house, which figures 5,769 sq. ft. or 641 sq. yds., requires

90 bundles of wood lath or
184 packages of gypsum lath or
321 sheets of metal lath or
184 sheets of insulating board lath or
642 yds. of welded wire fabric

3. **After arriving at the quantities of plaster support or plaster base**—the next point to consider is the amount of corner bead and expanded metal reinforcement.

In the typical house, which figures 5,769 sq. ft. or 641 sq. yds. of wall and ceiling surface, examination indicates that 13—8′ lengths of metal exterior corner bead, and 102—8′ lengths of interior corner and angle reinforcement are required. With conservative allowance for cutting waste, a safe estimate per 100 sq. yds. of surface in an average house would appear to be—exterior corner bead, 2 pcs. 8′ 0″, interior angle and corner reinforcement, 15 pcs. 8′ 0″ for a basement ceiling add 80 sq. yds. or 720 sq. ft.

4. **The next step is to determine** whether or not the customer is being offered the best material for his requirements. For example, if the plans provide for tile walls or floors in bathrooms, lavatories, kitchens, entries, etc., metal lath is a definite requisite for those areas even if the customer selects any other plaster support for the balance. Also, when use as the foundation for tile application, portland cement mortar should be used for the "scratch" coat because tile is usually set with a cement and lime mortar and the bond between gypsum base and portland cement plaster presents difficulties.

5. **Likewise,** any exterior plaster work should have a metal lath plaster support and be finished with portland cement mortar, or its equivalent, offered under various trade names in prepared form; all of which have the fundamental properties of portland cement with admixtures which tend to improve plasticity and workability.

6. **Having arrived at the kind** of plaster support or "base", the next step is to develop the kind and quantity of plaster for the rough coat and then for the finish coat. These kinds and quantities differ on account of the nature of the surfaces to which they are applied.

Wood lath, for example, will require a little more plaster volume than gypsum lath for the same area.

Expanded metal lath will require more than either wood or gypsum plaster support.

Some can well be used with a "neat" plaster sanded according to manufacturer's directions on the job; others require a fibered base, either wood or vegetable (or in some cases goat hair) fiber.

To aid in arriving at quantities for rough coat, Table No. III is given. Inspection will show:

1. What amount of material is required for a unit area of 100 sq. yds. or 100 sq. ft. over any of the plaster supports.
2. What kind should be used for the base selected.
3. What amount and kind of material is required for the various finish treatments.

***PLASTERED** walls lend themselves to a wide variety of finish treat- The typical dealer's masonry shed (above) provides dry storage for these products. The shed is usually built at dock height for efficient handling.*

To illustrate use of Table III, the same typical dwelling was selected and the required amounts were taken from Tables I and II.

On Table I, we find the total wall and ceiling area (exclusive of basement or attic) to amount to—641 square yards—by conversion to the quantities shown on Table III, we find the following *average requirements:

1. **For wood lath**—*9 to 11 bags per 100 sq. yds.—order 64 bags—sanded 2 to 1 equals 64x2 or 128 cu. ft. or approximately 4¾ cu. yds.—or—5.83 tons—order either 5 cu. yds. or 6 tons of sand.
2. **For gypsum lath**—*8 to 9 bags per 100 sq. yds.—order 55 bags—sanded 2 to 1—55x2 or 110 cu. ft. or approximately 4.1 cu. yds. or 4.4 tons—order either 4½ cu. yds. or 5 tons of sand.
   *The "mean" amount has been used; i.e., 9 to 11, 10 etc.
3. **For expanded metal lath**—17 to 20 bags (for two coats ¾″ grounds)—18 bag average—or—115 bags—sand required 2½ to 1 (average 1st and 2nd coat) or 288 cu. ft.—or—10.7 cu. yds.—or 13.4 tons—order 11 cu. yds. or 14 tons.
4. **For welded wire fabric**—the same as above.
5. **For gypsum tile**—10 to 12—11 bag average or 70 bags sand at 3 to 1—210 cu. ft. or approximately 7.8 cu. yds. or 9.5 tons—order 8 cu. yds. or 10 tons of sand.

TABLE III—INTERIOR PLASTERING

Plaster Base (grounds to be measured from the face of the lath support)	"Neat" or fibered Gypsum (100 lb.) bags
Wood Lath (¾″ grounds—½″ plaster required), *one coat operation	9 to 11
Gypsum Lath (⅞″ grounds ½″ plaster required), *one coat operation	8 to 9
**Expanded Metal (¾″ grounds—⅝″ plaster required over face of lath), 1st coat	
2nd coat	17 to 20
**Woven Wire Fabric (¾″ grounds—⅝″ plaster required over face of lath), 1st coat	
2nd coat	17 to 20
Gypsum Tile, ½″ in plaster required	10 to 12

For White "hard finish"—(plaster of paris and hydrated lime putty) for 641 yds. (on any of the above rough coats)—order 2x6.41 or approx. 13—50 lb. bags of plaster; 6x6.41 or approx. 39—50 lb. bags of hydrated lime.

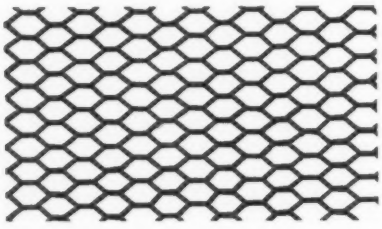
For sand finish—order 6.41x2—or 13—100 lb. bags of

MILCOR

Metal Lath Products and other Fireproof Building Materials

—the choice of architects, builders, and buyers for the finest modern construction

The Milcor Metal Lath Products line is designed to provide the safety of fire-resistance, the flexibility required by modern interiors, the erection speed and ease that makes for building economy, and the durability that preserves original interior beauty for years. These factors plus many other specific advantages make the Milcor line the first choice — and deservedly so — for the finest modern construction in buildings of all types.

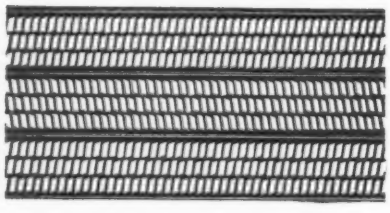


Milcor Metal Lath

The ideal base for durable plaster walls. Milcor Metal Lath provides a firm, multi-key bond that preserves wall beauty and *assures minimum maintenance costs.* Its flexibility permits perfect freedom for architectural design. Its fire-retardant qualities are "insurance" that is the best investment any owner can make.

SMALMESH METAL LATH

Sheet — 27″ x 96″ 2 square yards each	Price Per Sq. Yard
2.5 Lb. Painted Copper Alloy	
3.4 Lb. Painted Copper Alloy	
3.4 Lb. Galvanized	

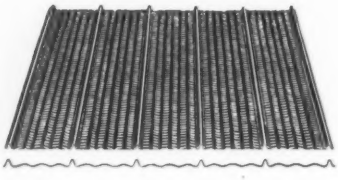


Milcor Specialmesh

Specialmesh is a ribbed lath especially adapted to interior walls and ceilings. Longitudinal ribs are ⅜″ wide, spaced 1⅝″ apart. Meshes are so formed that the slightest trowel pressure imbeds the lath. Waste plaster is held to a minimum.

SPECIALMESH

Sheet — 24″ x 96″ 1-7/9 sq. yards each	Price Per Sq. Yard
2.75 Lb. Painted Copper Alloy	
3.4 Lb. Painted Copper Alloy	

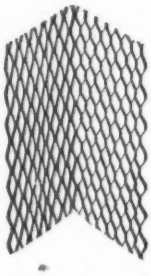


⅜″ Stay-Rib Metal Lath No. 2

No. 2 Stay-Rib Metal Lath has ⅜″ longitudinal ribs spaced on 4.8 inch centers with five stiffening members between. Ideal for all purposes where a rigid lath is required for wide spans on ceilings and for floor reinforcing over steel joists.

STAY-RIB METAL LATH

Sheet — 24″ x 96″ 1-7/9 sq. yards each	Price Per Sq. Yard
3.4 Lb. Painted Copper Alloy	
4.0 Lb. Painted Copper Alloy	

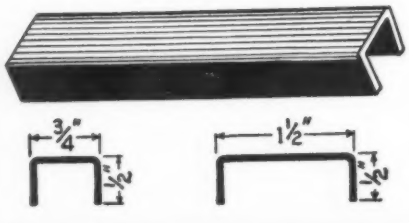


Milcor Corner Lath

For interior corners and ceiling angles. Consists of strips of expanded diamond lath formed to a right angle.

MILCOR CORNER LATH

Corner Lath	Price Per 1000 Ft.
2 x 2 x 96″ Ptd. Copper Alloy	
3 x 3 x 96″ Ptd. Copper Alloy	

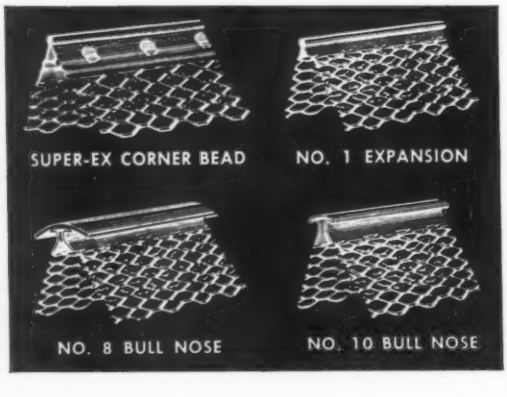


Milcor Cold-Rolled Channels

Milcor Steel Channels are cold rolled and present a level surface on three sides. They are accurately pressed at right angles.

MILCOR COLD ROLLED CHANNELS

Stock Lengths—16 and 20 feet	Price Per 1000 Ft.
¾″ Painted	
1½″ Painted	

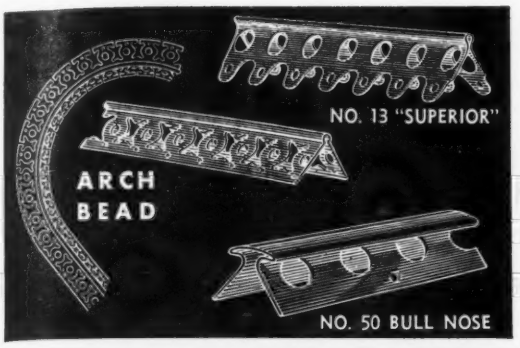


Milcor Expansion Corner Beads

Effective re-inforcement to protect straight or curved plastered corners. Rigid, provides excellent plaster bond.

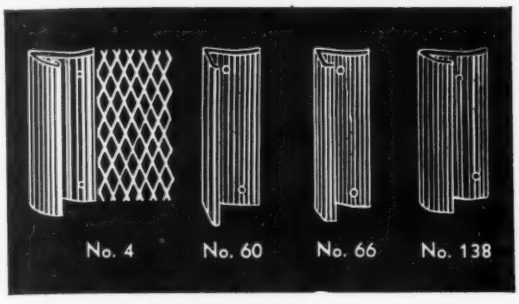
EXPANSION CORNER BEAD

Small Nose—8, 9, 10, 12 ft. Lengths Bull Nose—7, 8, 9, 10, 12 ft. Lengths	Price
Super-Ex, 26 Gauge	
No. 1, 26 Gauge	
No. 8, 1½ radius, 16 gauge face (other types can be furnished)	
No. 10, 26 Gauge	



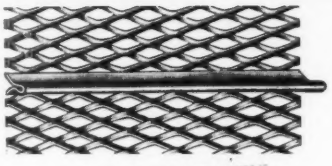
Solid Wing Corner-beads

Milcor Arch Bead
No. 13
No. 50



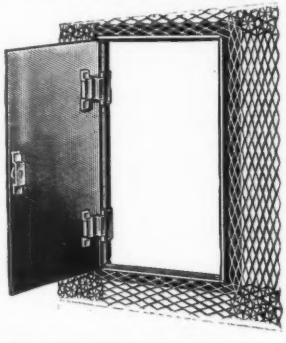
Milcor Casings, Corner Grounds, Special Moulds

Sanitary, easily installed, low-priced—positive asset to modern interiors in homes, apartment buildings, office buildings, hotels, schools, and public buildings.



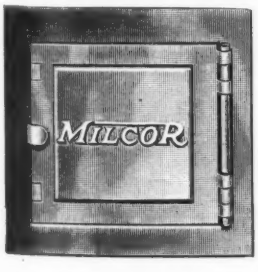
Milcor Base Screed and Picture Mould

Milcor Base screed is a firm metal dividing strip set between plaster and flush cement base. Expansion type has 2¾" wings of strong mesh lath which reinforces against the possibility of cracks at the juncture.



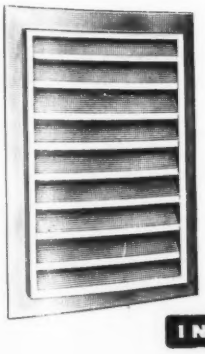
Milcor Metal Access Doors

Two types for plastered walls: Style "K" with expanded metal wing, Style "L" without. One type for non-plastered walls such as masonry, brick, stone, tile, etc.—style "M". Removable or hinged doors available; add "R" to style (as RL, RK, RM) for removable type. Flush-type cam lock standard.

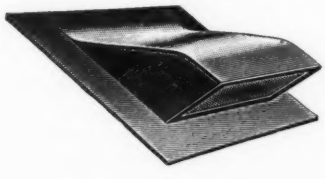


Milcor Clean-Out Doors

The Milcor Flue Clean-out Door is stamped from the highest grade, heavy 16 gauge Copper Alloy Steel.



Milcor Louver Ventilators



SOLID WING CORNER BEADS

Small Nose—8, 9, 10, 12 foot lengths Bull Nose—7, 8, 9, 10, 12 foot lengths	Price Per 1000 Ft.
Milcor Arch Bead, 26 Ga.	
No. 13 Superior, 26 Ga.	
No. 50, ¾" Radius, Bull Nose 26 Ga.	
(other types can be furnished)	

MILCOR CASINGS, CORNER GROUNDS, SPECIAL MOULD

Made in 7, 8, and 10 Ft. Lengths	Price Per 1000 Ft.
Note—all casings made in ½" and ¾" grounds.	
No. 4 Casing, 24 Ga.	
Nos. 60 and 66, 22 Ga., Short Flange*	
No. 138, 24 Ga., Short Flange	

*Also available in expansion wing, No. 24 Gauge

MILCOR BASE SCREED AND PICTURE MOULD

Made in 10 Foot Lengths	Price Per 1000 Feet
No. 3 Expansion Flush Base Screed	

MILCOR METAL ACCESS DOORS

Catalog Number	Wall Opening	Price Style K	Price Style L	Price Style M
8- 8	8⅜" x 8⅜"			
8-12	8⅜" x 12⅜"			
12-12	12⅜" x 12⅜"			
12-16	12⅜" x 16⅜"			
16-16	16⅜" x 16⅜"			
16-20	16⅜" x 20⅜"			
20-24	20⅜" x 24⅜"			
20-30	20⅜" x 30⅜"			
24-24	24⅜" x 24⅜"			
24-30	24⅜" x 30⅜"			
24-36	24⅜" x 36⅜"			

MILCOR CLEAN-OUT DOORS

Size	Price Each
8" x 8"	
8" x 10"	
10" x 12"	

MILCOR LOUVER VENTILATORS

No. 100 Series	Opening Size	Price Each
No. 108	8" wide x 8" high	
No. 112	12" wide x 12" high	
No. 116	8" wide x 16" high	
No. 118	12" wide x 18" high	
No. 124	14" wide x 24" high	
No. 200 Series		
No. 208	8" wide x 8" high	
No. 212	12" wide x 12" high	
No. 216	8" wide x 16" high	
No. 218	12" wide x 18" high	
No. 220	16" wide x 8" high	
No. 300 Series		
No. 308	8" wide x 8" high	
No. 312	12" wide x 12" high	
No. 316	8" wide x 16" high	
No. 318	12" wide x 18" high	
No. 324	14" wide x 24" high	
No. 330	24" wide x 30" high	
Roof Louver	Overall Size 15¾" x 18"	

All packed 6 per carton, except No. 330 which is packed 2 per carton.

INLAND STEEL PRODUCTS COMPANY

MILWAUKEE 1 WISCONSIN

Baltimore 24, Md. • Buffalo 11, N. Y. • Chicago 9, Ill. • Cincinnati 25, Ohio
Cleveland 14, Ohio • Detroit 2, Mich. • Kansas City 8, Mo.
Los Angeles 23, Calif. • New York 22, N. Y. • Rochester 9, N. Y. • St. Louis 10, Mo.

Your Best Lime Insurance at no extra cost is your choice of Ohio Hydrate

ZIGZAG BAGS

OHIO WHITE & HAWK SPREAD Hydrated Finishing Lime

For finish coat plastering and general use. Meets Federal Specification SSL-351 type N and A.S.T.M. Specification C-6-46T. Ohio White in 25- & 50-lb, Hawk Spread in 50-lb paper bags.

OHIO WHITE Autoclaved Finishing Lime

For finish coat plastering and general use. Autoclaved Lime needs no soaking before plastering. Meets Federal Specification SSL-351 type S and A.S.T.M. Specification C-206-46T. In 50-lb paper bags.

OHIO SUPERSPRAY Hydrated Lime

For spraying and dusting crops, whitewashing, and water treatment. A very finely pulverized, high-magnesium hydrated lime. 99½% thru 325 mesh. Packed in 25- and 50-lb kraft paper bags, or 50-lb asphalt laminated bags.

OHIO EVER-READY, EVERY-PURPOSE Hydrated Lime

For general use. Packed in single 10-lb paper bags or in containers of five 10-lb bags each.

OHIO SANLIME FINISH, Dry-Mix Plaster

For sand-finished interior plastering. All ingredients dry-mixed. Available in white and in colors: ivory, buff, pink, blue, and light green. In 100-lb paper bags.

THE OHIO HYDRATE & SUPPLY COMPANY
WOODVILLE
OHIO

Sold only through dealers. Write us for prices and descriptive literature, or ask us to have our nearby representative call on you.

Manufacturers of Lime and Limestone Products for Building, Agriculture, and Industry.

"neat" unfibered gypsum plaster—and—6.41x4—25.64 cu. ft. of sand—order 1 cu. yd. sand or 1¼ tons of sand.

ANY other size house can be figured in the same manner—by transposing the square yards as illustrated in Tables I and II to the quantities required per 100 square yards as given in Table III.

These quantities are based on average job conditions and fairly standard "ground" thicknesses.

Their main purpose is to convert pounds, tons, cubic yards, cubic feet, square feet, and square yards into units which the dealer or his salesman can write orders for—with confidence.

Square yard tables for any size room from 3x3 ft. to 22x24 ft. in 1 foot increments and in ceiling heights from 7 ft. to 12 ft. in 6 inch increments are readily available from any of the handbooks, issued by the several gypsum products manufacturers and may be obtained without charge on application to your source of gypsum plaster.

Sales Items:

Board Plaster Base
Builders Sand
Cement Colors
Gauging Plaster
Gypsum Lath
Gypsum Plaster
Hydrated Lime
Insulating Lath
Keenes Cement
Lathers Accessories
Metal Lath
Mortar Colors
Plaster Colors
Plaster of Paris
Plasterer's Tools and Accessories
Quick Lime
Gypsum Board Sheathing
Vermiculite Aggregate
Waterproofing Compounds
Welded Wire Fabric
White Portland Cement
White Sand
Wood Lath

Exterior Walls

Plastering and dampproofing exterior walls built of concrete block, rubble stone and brick: In dampproofing the exterior of basement walls, the usual cement plaster coat (with added or integral waterproofing) is applied from the lower edge of the footing course to approximately 2 inches above the finish grade line. For all general purposes 5 feet in height and ½-inch thick coat is considered ample. However, in some localities, when hydrostatic pressure prevails, it becomes necessary to supplement this treatment with two additional water seepage preventives. They are:

1. Mastic, cold emulsion, or hot asphalt mopped on.
2. Installation of clay drain tile at base of footing course (see Clay Products Section 19).

However, in this section, the chief concern is to arrive at the proper quantities which the dealer's salesman can recommend to his customer.

The most simple measuring unit is the square foot; and, when the perimeter and the height are known, the total square feet are easily obtained.

How to convert square feet into bags of cement and cubic yards or tons of sand: The coat of plaster will average ½ inch thick. It requires 4.17 cubic feet per 100 square feet of surface ½ inch thick.

By use of the same 1-3-(10 percent lime) mix as before described (with the addition of any appropriate waterproofing compound), we arrive at this simple formula.

1 bag of portland cement
3 cu. ft. of sand
10 lbs. of hydrated lime
(waterproofing to fit directions)

This mix will result in 3 cubic feet of plaster mortar and it will cover at:

¼" thick—144 sq. ft. .....second coats
½" thick— 72 sq. ft. .....regular coats
¾" thick— 48 sq. ft. .....brick work
1" thick— 36 sq. ft. .....rubble stone

The regular or ½ inch coat is most generally used.

The sample house, 24x30 feet, has an exterior perimeter of 108 lineal feet. It is usually safe to figure from the underside of footing to 2 inches above grade level. If this distance is 5 feet, this would give a total of 5x108 or 540 square feet. If 1 bag of cement equals 72 square feet ½ inch thick, the 540 square feet divided by 72 equals 7½ or 8 bags. If 3 cubic feet sand equal 72 square feet then 540 square feet require 540 divided by 72 multiplied by 3 or 22½ cubic feet. Order 1 cubic yard; or if sold by ton, 1 ton.

Hydrated lime requires 8/10 bag. Order 1 bag.

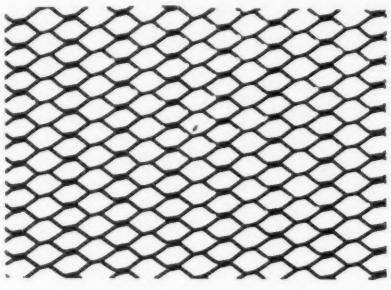
Alabama Metal Lath and Accessories Make

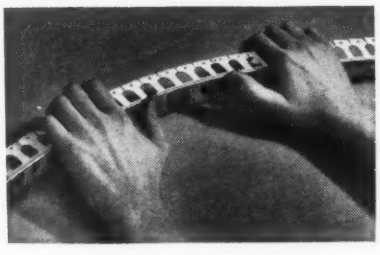
SALES EASIER

Modern, up-to-date methods, custom-made machinery and expert craftsmen make Alabama Metal Lath and Accessories the best products of their kind that can be made. Checks and inspections are continuous throughout our process of production, packing and shipping. Plasterers, architects and builders like them. Dealers find them easy to sell.

SMALL MESH DIAMOND LATH

Square ends and smooth edges. Sheets 27" x 96" (2 sq. yds.) with 10 sheets to the bundle. Easy to handle and put up.

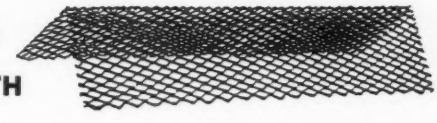




ARCH BEAD

will not kink or break at the nose, but will form a perfect radius for most types of ornamental work. Provides ample key for plaster.

SMOOTH EDGE CORNALATH



New and improved, no raw edges. No needles, no fish-hooks. Smooth Selvedge edges. Painted copper alloy steel. Pieces are 8' long and 2" x 2" or 3" x 3". Packed 25 strips to the bundle, 3 bundles or 600 lineal feet per crate. Used mostly for reinforcing corners.

ALABAMA PRODUCTS INCLUDE—

- Small Mesh Diamond Lath
- Rib Lath
- Striplath
- Steel Studs
- Corner Beads
- Arch Beads
- Base Screed
- Picture Mold
- Wall Ties
- Tie Wire
- Hangar Wire
- Bead Clips

SOLD THROUGH DEALERS ONLY

ALABAMA
Metal Lath Company
INCORPORATED
"Four-A Quality"

P. O. Box 992 BIRMINGHAM, ALABAMA

Tamms

MORTAR CEMENT PLASTER

colors

Take on Tamms and you'll be the COLOR center of the building supplies trade. Tamms offers you a complete line of quality colors for volume-building sales.

Tamms PLASTER COLORS

TAMMS PLASTER COLORS come in 14 beautiful color tones, each of uniform quality to assure a non-variable tint in each and every mix. Made from non-fading pure oxides, these permanent plaster colors are unaffected by lime, alkalis or acids. The economical 5-lb. package will tint 200-lbs. of plaster—eliminate guesswork and waste. Also sold in 100-lb. bags.

Tamms CEMENT COLORS

TAMMS CEMENT COLORS are prized for their permanency and greater tinting strength . . . also provide better color tone in stucco work. These finely ground, non-fading colors are acid-free, lime-proof and alkali-proof. For fast turnover display the 13 popular colors in handy 5 and 10-lb. packages . . . for volume sales stock the 25 and 100-lb. drums and 50-lb. bags.

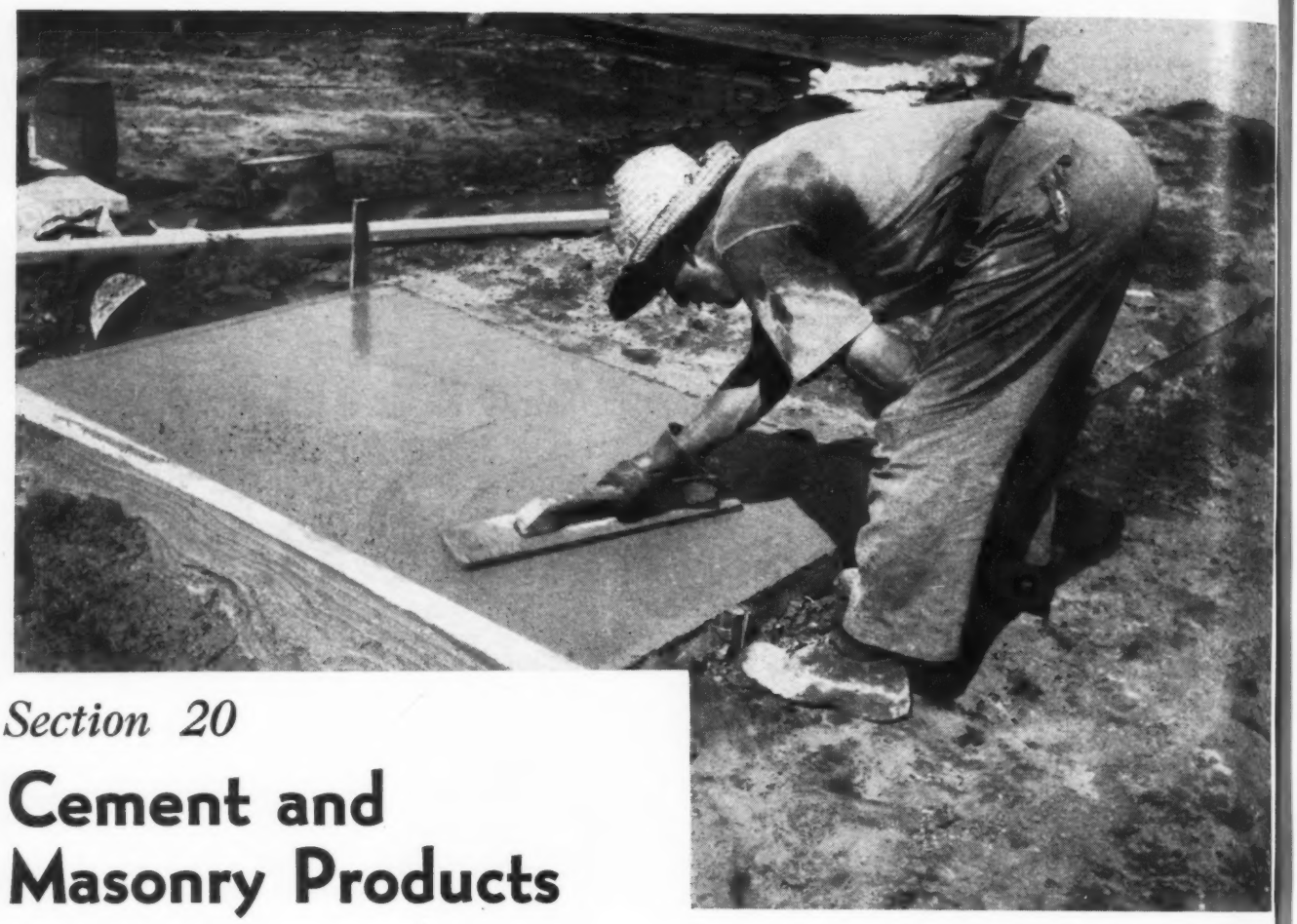
Tamms MORTAR COLORS

TAMMS MORTAR COLORS look better, wear longer because they're ground from permanent, non-fading *natural* ores. The extremely fine texture of these *double-strength* colors makes for easy mixing and applying. Packed in fast-selling 10 and 25-lb. non-sifting, waterproof bags and in volume-producing 50-lb. bags. Be sure to stock up on all 10 popular colors now!

ALSO HEMATITE COLORS FOR BRICK MANUFACTURERS

WRITE TODAY
for color cards . . . prices and catalog of 166 items

TAMMS SILICA CO., 228 N. LaSalle St., Chicago 1



Section 20

Cement and Masonry Products

FEW PRODUCTS carried by building material dealers have proven to be better sales stimulators than cement and the numerous accessories to the making of concrete and concrete masonry.

The sale of cement generally stimulates the sale of sand and gravel, form lumber, insulating board, building paper and many other items.

The dealer who is prepared to supply the wide variety of items required for concrete construction work, and who thoroughly understands the requirements for concrete construction, is in a position to build a profitable business.

In recent years, concrete construction has helped overcome some material shortages. In furthering projects that otherwise would have been delayed, cement has activated the sale of other building materials and products that enter into the complete light construction package sold by the dealer.

MARKETS

Cement is still one of the most critical of all building materials, in spite of the fact that manufacturers throughout the United States are geared to an all-time high production.

Much of the difficulty is due to the confusion resulting from the abolition of the basing point system of distribution which has presented the cement industry with some serious problems. Another reason for cement shortages is the fact that the government is a large buyer, and is constantly draining off a substantial amount of the total production.

In spite of these problems, it appears that cement products will not continue in too short supply, except perhaps in isolated areas, and the dealer can therefore feel free to specify them for their numerous applications in home and farm construction and maintenance.

Few permanent buildings of any kind are erected today without concrete and masony products figuring importantly in the bill of materials. The dealer who understands thoroughly the application of these products will find that he can stimulate sales of other materials as well, for in most uses, concrete and masonry products are used in connection with many other kinds of building products.

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During the past year, residential building was the largest single item of construction. Despite all handicaps, most predictions are that this will continue to be the case for the next few years at least. Because cement and masonry products have found an ever widening range of uses in the home construction field, it is logical to assume that the demand for these products will continue at a high level.

In the field of non-residential building, particularly the farm market, the uses and applications of cement and masonry products are so widespread that there is always a heavy demand for them. Surveys prove that there still exist a tremendous backlog of farm improvement work to be done, and what is equally as important, that while farm income many level off at a somewhat lower figure than the past few years, it will remain high; and the farm owner will be financially able to undertake the planned improvements.

CONCRETE

Portland cement is the most essential ingredient of concrete. Concrete is made in a number of ways—

(a) Cement, gravel, or crushed stone are delivered to the job and mixed by hand (where the quantities are relatively small, this is still an efficient method).

(b) Same as above except that the contractor will use a power driven mixer which not only saves laborious work but gives the assurance of a thorough mix in either moist, damp, or wet applications.

In either of the foregoing, waterproofing compounds, either inherent in the cement or added as liquid or powder while the mix is in process, may be incorporated; although concrete made from well proportioned materials, properly placed and cured, requires no waterproofing compounds.

Mobile machine mixed concrete—In recent years, an increasingly acceptable method of obtaining concrete has been developed by equipping trucks with rotating motor driven cylindrical mixers. These are loaded through appropriate hoppers from several elevated storage bins with any kind of aggregate or cement.

Of the several types of machines used for this purpose, there are two which require description. One is where the water is added to the dry mix at the point of origin (actually the mixed concrete is loaded into a rotating drum when it leaves the factory). The other type is where the dry mix is loaded and mixed by rotation on its way to the job with water being added during transit.

Ready mixed mortar—In larger cities where jobs of considerable size are built, similar practices have been developed to supply ready mixed cement mortar for masonry walls, top-coating of concrete floors, and plastering of masonry walls. This method has the same desirable feature of saving time, space, and labor on the job; and, as a consequence, can not but help to accelerate the project.

Concrete aggregates—Because the qualities of concrete or mortar depends, not only on the kind and amount of cement in any mix, but equally so on the kind of aggregates, this item has, in recent years, received careful attention.

In order to control both the quantities and the purity of the mix, the processors developed

Crushed Stone—screened and graduated to size
Gravel—Washed—screened and graduated to size
Sand—washed—screened and graduated to size

All foreign matter, such as loam and clay, has been separated; and the present day available aggregates are a distinct improvement over the bank-run type of aggregate.

Two other aggregates, cinders and slag, are becoming increasingly acceptable in certain phases of the use of concrete.

Cinders, of controlled maximum size (with an admixture of smaller particles) graded to specification, are being widely used as an aggregate for concrete block, medium weight bearing floors, etc. A light weight concrete having good structural value results from the use of cinders —usually used without sand.

Expanded slag. Slag, a by-product of the steel industry is, after grading for size, an excellent light weight, yet strong aggregate. Slag aggregate may be mixed with sharp sand in order to fill the voids, if there is a deficiency in fines.

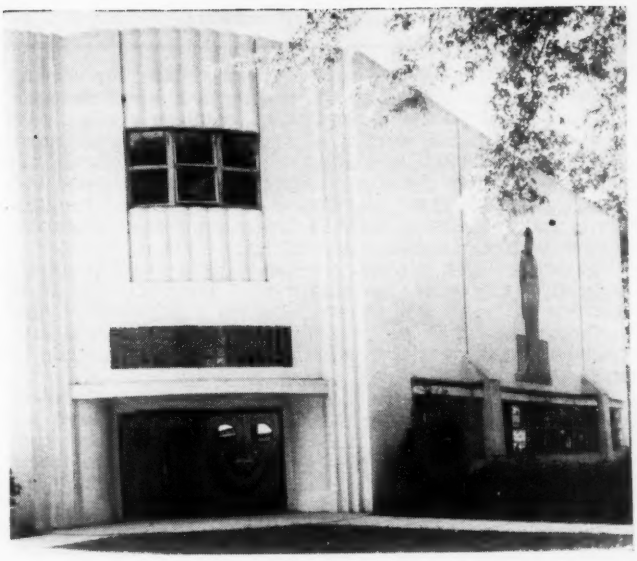
Light Weight Aggregates. In addition to the previously mentioned aggregates for structural concrete, a new lightweight group of manufactured aggregates have been perfected.

Among the most common of these are Haydite, Waylite, Celocrete, Vermiculite, and pumice.

Fireproof, rot proof, termite proof; plus the functional characteristics of being excellent non-conductors, inert, with no reaction to other substances, they are ideal for many applications.

Vermiculite. Vermiculite, one of the widely accepted light aggregates, is an "exploded" alteration product of mica. As a concrete aggregate it weighs between 5 and 6 pounds per cubic foot.

With the admixture of liquid waterproofing (approximately 1 quart to each 3 cubic feet of aggregate) a very desirable mixture results. This can be used for roof



CONCRETE is one of the most versatile of all building materials. Here it presents a beautiful exterior for a public building. Its utility is equally important in residences, farm buildings, and most other types of construction.

How to Select Proper Mix

Recommended proportions of water to cement and suggested trial mixes

KINDS OF WORK	Add U. S. gal. of water to each sack batch if sand is			Suggested mixture for trial batch			Materials per cu.yd. of concrete*		
	Very wet	Wet (average sand)	Damp	Cement, sacks	Aggregates Fine, cu.ft.	Aggregates Coarse cu.ft.	Cement, sacks	Aggregates Fine, cu.ft.	Aggregates Coarse cu.ft.
5-Gal. Paste for Concrete Subjected to Severe Wear, Weather or Weak Acid and Alkali Solutions									
One-course industrial, creamery and dairy plant floors, etc.	3¾	4	4½	1	1¾	2	8	14	16
					Maximum size aggregate ¾ in.				
6-Gal. Paste for Concrete to be Watertight or Subjected to Moderate Wear and Weather									
Watertight floors, such as industrial plant, basement, dairy barn; watertight foundations; driveways, walks, tennis courts, swimming and wading pools, septic tanks, storage tanks, structural beams, columns, slabs, residence floors, etc.	4¼	5	5½	1	2¼	3	6¼	14	19
					Maximum size aggregate 1½ in.				
7-Gal. Paste for Concrete not Subjected to Wear, Weather or Water									
Foundation walls, footings, mass concrete, etc.	4¾	5½	6¼	1	2¾	4	5	14	20
					Maximum size aggregate 1½ in.				

*Quantities are estimated on wet aggregates using suggested trial mixes and medium consistencies—quantities will vary according to the grading of aggregate and the workability desired.

It may be necessary to use a richer paste than is shown in the table because the concrete may be subjected to more severe conditions than are usual for a structure of the type being constructed. For example, a swimming pool ordinarily is made with a 6-gal. paste. However, the pool may be built in a place where soil water is strongly alkaline, in which case a 5-gal. paste is required.

How to Estimate Materials Required for 100 Sq.Ft. of Concrete of Various Thicknesses

Thickness of concrete, in.	Amount of concrete, cu.yd.	Proportions 1:1¾:2 mix Cement, sacks	Aggregate Fine, cu.ft.	Aggregate Coarse, cu.ft.	1:2¼:3 mix Cement, sacks	Aggregate Fine, cu.ft.	Aggregate Coarse, cu.ft.	1:2¾:4 mix Cement, sacks	Aggregate Fine, cu.ft.	Aggregate Coarse, cu.ft.
3	0.92	7.5	12.9	14.7	5.8	12.9	17.5	4.6	12.9	18.4
4	1.24	10.0	17.3	19.9	7.8	17.3	23.6	6.2	17.3	24.8
5	1.56	12.5	21.9	25.0	9.8	21.7	29.6	7.8	21.8	31.2
6	1.85	15.0	25.8	29.4	11.5	26.0	35.2	9.3	26.0	37.0
8	2.46	20.0	34.6	39.8	15.4	34.4	46.8	12.3	34.4	49.3
10	3.08	25.0	43.8	50.0	19.3	43.2	58.5	15.4	43.2	61.6
12	3.70	30.0	51.6	58.8	23.1	51.8	70.4	18.5	51.8	74.0

Quantities may vary 10 per cent either way, depending upon character of aggregate used. No allowance made in table for waste.

decks, light weight load floors, precast slabs for roofing, accoustical tile and many other practical applications.

These properties, of light weight, insulating value, ease of handling, lesser weight of supporting steel, etc., coupled with general availability, (processing plants are now operating in forty key cities) combine to make this aggregate a product worthy of any dealer's attention. While he may not store it in large quantities, a reliable service source should be established.

Likewise, local cement product manufacturers should certainly explore the possibilities of its use, both as to delivery of light weight concrete via the "transit mix" method, and also the benefits of producing pre-cast, light-weight roof slabs, accoustal tile and other structural units.

Vermiculite Concrete Aggregate consists of Vermiculite graded to the same size as ordinary sand used for aggregate in concrete. It is packed in paper bags containing about four cubic feet and weighing approximately 35 pounds.

Concrete is made by mixing vermiculite concrete aggregate with portland cement and water. (By putting vermiculite concrete aggregate through a stabilizing process, manufacturers during the past year have eliminated the need for using an admix to make the concrete integrally water repellent and to increase its coverage.)

Wherever a structural material providing a warm, dry surface is needed, Vermiculite Insulating Concrete can be used to advantage. It can be mixed and poured on the job, or it can be precast into blocks or slabs and laid into place. It has sufficient strength to be used in structural floor and roof construction, and is also extensively used as an insulating concrete fill over existing floors. Due to its extreme light weight it does not place undue strain on framing members.

Vermiculite insulating concrete requires a surface coating wherever it is to be exposed as a wearing surface. It is recommended that a hard cement topping be placed over Vermiculite concrete when it is used in floors. A cement finish of 1 to 2 inch thickness is ordinarily used, depending upon the service conditions of the floor. A mix of 1 part cement, 1 part sand and 2 parts coarse aggregate produces a satisfactory topping which should be reinforced with 4x4 inch mesh made of No. 8 gauge wire.

The placing of the cement finish should be delayed as long as possible to give the Vermiculite concrete the opportunity to thoroughly dry out.

Concrete Mixing

It is important that only a limited measured amount of water be used in the concrete mix. Over diluted cement paste, which hold aggregates together, means weak and porous concrete. Water is conveniently measured in a pail marked gallons or half-gallons. Sand and gravel may be measured in a 1 cubic foot box. Portland cement is sacked 1 cubic foot to the sack.

Machine mixing is the most convenient for farm use. After all materials are in the mixer, allow one to two minutes of mixing, place in forms immediately.

Hand mixing. Place the measured amount of sand on a watertight mixing platform. Spread cement evenly over the sand and turn the two materials with a shovel until a uniform color shows that sand and cement are thoroughly mixed. Spread mixture out evenly and add measured amount of gravel. Mix thoroughly again; then form a hollow in the material and slowly add the measured quantity of water. Mixing should continue until every particle is completely covered with cement paste.

HOW TO ESTIMATE FOR STUCCO AND PLASTER

(Per 100 Square Yards of Solid Wall Surface)

Thickness of Stucco	Cubic Yards of Sand	Bags of Masonry Cement
¼"	.74	6.6
⅜"	1.10	9.9
½"	1.47	13.3
¾"	2.21	19.9
1"	2.94	26.5

***THE PROVISION** of ready mixed concrete, or the rental of mixing machinery are profitable services for the building products dealer.*

Placing of Concrete

Concrete should be placed in forms immediately following mixing. Concrete in forms should be tamped and spaded or vibrated to assure a dense concrete.

Finishing

Newly placed concrete is leveled off in the forms with a wood float. Further finishing is delayed until concrete hardens enough to become quite stiff. If a non-skid floor is desired, a wood float is used to produce the final finish. If a smooth dense surface is required, a steel trowel is employed in finishing.

Curing

Concrete needs moisture to harden properly; therefore, new concrete should be protected from drying for at least five to seven days. Floors and other horizontal surfaces should be covered with earth, burlap or straw and this material kept wet for the required time. Walls should be covered with burlap or canvas and this material kept wet; allowing forms to remain in place will provide some protection.

Concrete Reinforcement. Reinforcement is the term used to describe the steel bars or welded mesh placed in concrete to increase its tensile strength. Concrete is a material which is very strong in compression for supporting loads placed directly upon it, but it requires steel reinforcing in some structures to increase its power to resist forces that tend to bend or pull it apart.

Expansion joints—Concrete is subject to expansion and contraction imposed by temperature. Research has proven that the "cracks" which result can be largely prevented; and likewise the stresses to supporting or surrounding members, which expansion causes, by the provision of expansion joints which are placed at stated intervals (casual inspections of pavements, highways, bridges will serve to illustrate this practice).

Expansion joints are a problem in that they must be able to "squeeze" or "stretch" and yet remain water, weather, and wear proof and resume their original shape. There are many types, some of which are for specific use, others for general application.

CONCRETE BLOCK

With the employment of controlled aggregates and the proper amount of portland cement combined with power tamping or vibration to compact a ' mold the units, together with the use of moist curing kilns to provide the

necessary moisture and allow the concrete to attain full strength, the concrete block has come into its own as the leading masonry material today. Government figures show that ⅔ of all masonry walls built today are constructed of concrete block.

Improved design of high production machines has resulted in the mass production of an accurately dimensioned, strong, and durable construction unit at low cost to the consumer.

The cinder aggregate concrete block can be nailed into with ease, and yet hold the nails very securely wherever furring or finish moldings are applied directly to it.

Concrete block provides an excellent base for portland cement plaster, below grade for waterproofing purposes, or above grade for attractive exterior wall finish treatments.

CONCRETE BRICK

In some areas the production of concrete brick has gained increasing acceptance; for it is an attractive building unit that lends itself admirably to practically all types of construction where brick must ordinarily be used.

Concrete brick may be either hollow or solid, in natural gray color, or tinted with pigments during manufacture.

Surface finish can be either smooth or textured to meet any requirements.

ASBESTOS CEMENT

Asbestos cement, a combination of asbestos fibres and portland cement, is used in a wide variety of building products.

Siding shingles are the largest item of production in the asbestos-cement products industry, although corrugated sheets, insulating boards, roof sheathing, wall and ceiling lining, and roofing shingles are also important factors in the building products field.

For specific product information concerning these items, see Section 9—Roofing, Shingles, and Siding; Section 7—Board Products.

MORTAR AND COLORS

Mortar is one of the oldest products in the building industry and has been composed of a number of ingredients, such as: clay and sand; natural cement, lime, and sand; portland cement and lime and sand; processed mixtures, with or without sand.

To recognize the importance of mortar, it must be understood that any masonry wall or chimney depends for its durability on the plastic medium called mortar which connects and holds together the masonry elements of the structure.

Formerly, lime mortar was the only type available and examples of its lasting properties are still to be found in buildings which were constructed centuries ago.

With the discovery of natural cement, a mortar was developed which had the property of hardening to a much greater extent than lime.

Portland cement revolutionized the former concept of what mortar should be. It was found by experiment that cement, sand, and lime in proper proportions for the intended purpose became, because of the hardening properties of portland cement, a more desirable material in that it quickly became as hard (and in many instances harder) than the masonry units which it served to connect and that its durability increased with age.

There are, at present, numerous formulas regarding the correct amounts of each ingredient; some of which vary whether the work is above or below grade and whether common brick, cement block, or stone are being laid.

Much depends on custom and geographic location; and also the habits formed by the laborer who mixes the mortar. To overcome the individual habits of the laborer, who does the mixing, several manufacturers have made available to building products merchants a prepared masonry cement. Some manufacturers have even prepared a factory-mixed mortar with the proper proportion of the best suited grade of sand.

A good mortar must have the following characteristics if it is going to provide the desired results.

a. **Plasticity**—Within certain limits plasticity is the greatest single factor not only in the economy of brickwork, but also in its strength, neatness, and its resistance to the passage of water.

b. **Water Retention**—Water retaining capacity is the ability of a mortar to retain its moisture and hence its plasticity, when spread on porous brick. If the mortar does not have high water retaining capacity it is too quickly sucked dry by the brick; the mortar stiffens too soon, the brick cannot be properly bedded and a good bond cannot be obtained.

c. **Good Bond**—The first function of a mortar is to form a strong permanent bond with the entire surface of the brick.

d. **Strength**—Mortar must be strong enough to resist compressive and transverse wall loads. A strong mortar also has greater durability than a weaker mortar.

Permanently dry walls, free of efflorescence and fading (in case of colored mortar) economically constructed, is the desire of every architect and builder.

Use

All type masonry	—Brick, concrete block, stone glass block
Plaster	—On masonry backup or metal lath only
Stucco	—Masonry backup or metal lath only

MIXES

1 volume masonry cement and between 2 and 3 equal volumes of sand; or 1 volume portland cement plus 1 volume of hydrated lime or lime putty and 2 or 3 volumes of sand.

Hand Mixed

a. Mix sand, cement, and lime thoroughly; at least four or five dry turns before adding water.

b. Add a bucket of water for every bag of cement in the mix. Hoe the mix until it becomes damp throughout.
(Be careful not to flood the dry mix at first as this separates the cement from the sand and makes more hoeing necessary.)

c. Slowly add a little more water and hoe until mortar is in shape to place on mortar board. Be careful not to add too much water.

Machine Mixed

a. Throw in about ½ bucket of water so the material will leave the machine clean. Throw in part of the sand—then the cement—then the rest of the

CONVERSION FACTORS

Footings per 10 lin. ft.	cu. ft.	Concrete floors per 100 sq. ft.	Approx. cu. ft.	Concrete Walls per 100 sq. ft.	Approx. cu. ft.
6″x12″	5.0	1″ thick	8.3	4″ thick	33.0
6″x16″	6.7	2″ thick	17.0	6″ “	50.0
8″x16″	8.9	3″ thick	25.0	8″ “	67.0
8″x20″	11.1	4″ thick	33.0	10″ “	83.0
8″x24″	13.3			12″ “	100.0
				16″ “	125.0
				20″ “	166.0

For all other footings, figure cubic feet by using plan sizes.
To find square yards, divide square feet by 9.
To find cubic yards, divide cubic feet by 27.

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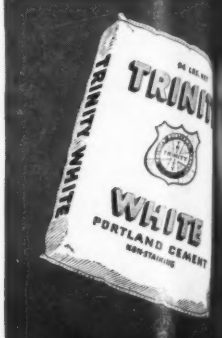
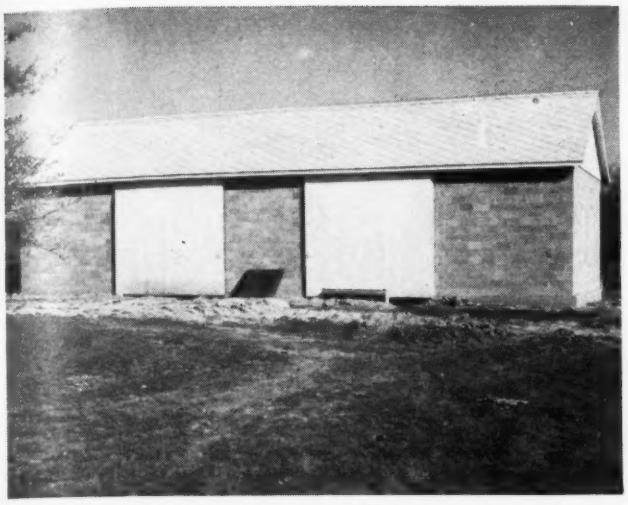


as white **as snow**



CONCRETE BLOCKS make durable, quickly installed walls for all types of structures. Here they are used in the construction of a farm utility building.

sand. Run the machine several revolutions before adding more water.

b. Add water slowly and be careful not to flood the mix.

A one bag mix in the machine takes only about one and one-half buckets of water.

Estimating Data for mortar and stucco mortar.

One bag of Masonry Cement contains one cubic foot when mixed 1-3 with sand, 9 bags of Brixment and 27 cubic feet of sand make one cubic yard of mortar. For average job this is usually sufficient to lay from 1500 to 1800 brick. 1000 brick usually requires from 5 to 6 bags of Masonry Cement.

Colors—All mortars may be colored with the admixture of dry pigments. This extends to white cement and white or seashore sand for the finish textures.

Waterproofing—Many specifications now call for waterproofed mortar. Such protection, which is highly desirable, is accomplished by two common methods, as follows:

1. Portland cement is used, which has been processed at point of manufacture with waterproofing agents and is usually termed "integral" waterproofing.
2. Ordinary portland cement is used and liquid base or powder type of waterproofing is blended either with the dry mix (when powder is used) or with the mixing water if the liquid type is employed. Excellent results are produced by any of the three methods.

PAINTS FOR CONCRETE SURFACES

A number of products have been developed for painting concrete surfaces. Generally, these fall into two primary divisions, and the kind of exposure or use will determine which is best suited for the consumer's needs.

Group 1—consists mainly of those finishes which, when mixed with water, will form a paint that may be either sprayed or applied with a brush.

These products come in white and colors and are water resistant and give excellent service on exterior and interior vertical wall surfaces.

These products are generally made with a portland grey or white cement base with chemical admixtures designed to improve their workability.

Some are manufactured and packaged in powder form; others in a paste form and some are formulated so that, if desired, they can, by the addition of white or marble dust, be applied as a texture finish.

Group 2—consists of oil base paints and enamels. These are formulated to produce a durable wearing surface on basement, garage, and porch floors.

To minimize saponification where oil base finishes are applied to new untreated cement or concrete surfaces, it is quite customary to pre-treat the surface with a solution of sulphate of zinc which, when dry and the excess brushed off, causes the cement surface to receive the paint or enamel with less possibility for failure.

This group of finishes comes in many shades of colors and an attractive durable floor surface can be obtained by their application, particularly if the maker's directions are closely observed.

For further information, see Section 4—Paint and Decoration.

Calcium chloride. Calcium chloride, because of its ability to accelerate the rate of hardening of concrete, may be used in cold weather to reduce the time of protection of the concrete, by covers and artificial heat. Not more than 2 pounds of calcium chloride per sack of cement should be used.

It also has a definite effect on the concrete mix by increasing the "slump" and, as a consequence, a mix treated with it will adapt itself to placement in intricate forms and, because of the greater "slump," result in a more homogeneous mass with fewer voids.

It is usually packaged in 50 and 100 lb. bags which are double walled made with highly moisture resistant fiber and carefully sealed to preserve the contents. On account of its definite affinity for water it must be stored in unbroken packages in a dry place.

TECHNICAL DATA FOR SALESMEN

For the salesman's use in arriving at the quantities of cement, sand, block, stone, gravel, etc., a Masonry Selection table No. 1 is given. This will facilitate writing orders for the required amounts of any of these quantity items.

The commonly accepted terms of measurement for these items are:

Sand or gravel or crushed stone—by the cubic yard or ton ("by the ton" is becoming more generally accepted as it lends itself to greater accuracy and simplifies loading and measuring of less than ton quantities).

Concrete by the cubic yard, cubic foot or square foot—commonly when sold in bulk the cubic yards is used and manufacturers of concrete use it as a unit price.

Cubic foot—this measurement is useful in estimating volumes from plans such as walls, footings, porch foundations, walks, floors, trench walls, etc. Usually, the amounts of cubic feet are transposed into cubic yards by dividing the total by twenty-seven, which is the number of cubic feet in one cubic yard, and priced by the cubic yard.

Square feet—this method of estimating concrete is used for side wall plaster, concrete floors, or top coat and also walks. When used, interpolation of the correct factor is essential. See Table of Conversion Factors.

The end result of any plastic mortar, concrete, or plaster mix is not the same in volume as the volume of the elements used in making the mix.

Consequently, the salesman is confronted with two problems

1. of knowing how much of the elements fit together to provide the correct quantity of the finished mix —and
2. of knowing the custom with regard to packaging so that full bundles, bags, cubic yards, tons, square feet, or cubic feet may be written on a purchase order to effect two results
   (a) to provide the correct amounts written so that the shipping department can load in "standard" packages or amounts.
   (b) to avoid either ordering too much or too little and causing either shortage on the job, or the necessity for a "pick up," both of which are expensive.

Concrete tables for Dealer Salesmen—These tables are designed to aid the salesman in assisting his customer to place orders for the right amounts of material required for one cubic yard or 27 cubic feet of concrete.

Simple computation of plan areas will give total number of cu. yds. needed and simple multiplication will provide the answer for the whole job.

In this table we have resolved cement into bags instead of barrels—in decimals. By doing this, we may slightly exceed the actual amount of cement. However, no dealer can sell or deliver 1.11 bbls. of cement. It's much simpler to write 5 bags, which actually equals 1.25 bbls.

We have also given number of pounds, decimal parts of tons, number of cubic feet, and decimal parts of cubic yards so that either cubic yards or tons of sand, gravel, or stone can be computed.

In the table, sand and crushed stone are figured at 2500 pounds per cubic yard or about 21.6 cubic foot per ton, or about 92½ pounds per cubic foot. This, of course, may vary somewhat by reason of sand or stone being wet or dry, coarse or fine, but not seriously enough to appreciably affect the estimated quantities.

Gravel is figured at 3,000 pounds per cubic yard; 18 cubic feet per ton; or 111 pounds per cubic foot.

Cement, of course, is figured at 1 cubic foot per bag of approximately 94 pounds.

In the Table No. I, the number of bags of cement is given as six or five depending on the mix. These amounts are developed for the smaller jobs and should be used for quantities up to 5 cubic yards.

For larger jobs, the table gives in decimals the barrels of cement, as 1.34 or 1.11, etc.

To find the amount or number of bags for a job in excess of 5 cubic yards multiply the number of cubic yards by the decimal barrel figure first to find the amount of barrels and then multiply this by 4 (the number of bags per barrel). Always use the next larger number of bags.

Estimating masonry quantities from plans—The most dependable and easiest method in taking off plans is in square feet or linear feet and by using the figured dimensions instead of scale.

After these totals have been arrived at, conversion into cubic feet, cubic yards, square yards, or tons is quite simple.

Likewise, by reference to Table No. I, once the totals have been established, the number of bags of cement, tons or cubic yards of sand, gravel, or crushed stone will be easily arrived at.

The required amounts of cement block or brick are also found in the same manner.

Estimating mortar quantities—Mortar is prepared on the job in two ways.

1. Mixing cement, sand, and hydrated lime together.
2. Using a prepared mortar mix to which sand only is added.

In case No. 1, to provide a good general purpose mortar for use either below or above grade, the proportions are

1 part cement—3 parts (by volume) sand—and 10% or 10 lbs. of hydrated lime per bag of cement.

In case No. 2, 3 parts of sand by volume are added to 1 bag of prepared mortar mix.

Cu. ft. of mortar required for 100 concrete block

4″ x 8″ x 16″ — ½″ joint — 3 cu. ft.
8″ x 8″ x 16″ — ½″ joint — 3¼ cu. ft.
8″ x 12″ x 16″ — ½″ joint — 3¼ cu. ft.

Because mortar is usually not sold by the cubic foot, it becomes necessary for the salesman to arrive at quantities of material, which may be ordered to produce the desired number of cubic feet of mortar.

The most convenient unit is 1 bag of cement; and, in the 1-3-mix previously described, 1 bag of cement is mixed with 3 cubic feet of sand and 1/5 of one 50 pound bag of hydrated lime.

A positive method is to construct a hollow bottomless measuring box which measures—12″ wide x 12″ high x 12″ deep. This when filled will equal 1 cubic foot. A mark or plate attached 1-3/16″ up from the bottom side will provide the measure for 1/10 cubic foot of hydrated lime.

The resulting mix will amount to 3 cu. ft. and will provide mortar to lay

90—8″ x 8″ x 16″ concrete block—or
90—8″ x 12″ x 16″ concrete block—or
100—4″ x 8″ x 16″ concrete block

Sand and lime—for each bag of cement 3 cubic feet or 1/9 cubic yard of sand are required. If sand is sold by the ton, then each bag of cement will require 275 pounds of sand and 10 pounds of lime.

THE ABOVE STUCCO finished small homes have all the essential qualities of beauty, stability, and economy. A number of available color surface treatments further enhance their appearance.

To arrive at the quantities for a job, refer to the preceding examples of a two story house size 24′ x 30′. This required approximately 788—8″ x 8″ x 16″ block.

If 75 block require 1 bag then

750 block will require.....10 bags
balance can be laid with..... 1 bag

TOTAL .....11 bags

Sand—if 75 block require—3 cu. ft.
then 750 block require.....30 cu. ft.
for extra bag of cement (above) add 3 cu. ft.

TOTAL .....33 cu. ft.

TOTAL cu. yds. approx.....1¼ tons

If sold by the ton—
approx. 3,000 lbs.—or.....1½ tons

Plastering and dampproofing exterior walls built of concrete block, rubble stone and brick:—In dampproofing the exterior of basement walls, the usual cement plaster coat (with added or integral waterproofing) is applied from the lower edge of the footing course to approximately 2 inches above the finish grade line. For all general purposes 5 feet in height and ½-inch thick coat is considered ample. However, in some localities, when hydrostatic pressure prevails, it becomes necessary to supplement this treatment with two additional water seepage preventives. They are—

1. Mastic, cold emulsion, or hot asphalt mopped on.
2. Recommended use of drain tile in all but dry regions and exceptionally well drained soils.

However, in this section, the chief concern is to arrive at the proper quantities which the dealer's salesman can recommend to his customer.

The most simple measuring unit is the square foot; and, when the perimeter and the height are known, the total square feet are easily obtained.

How to convert square feet into bags of cement and cubic yards or tons of sand.

The coat of plaster will average ½ inch thick. It requires 4.17 cubic feet per 100 square feet of surface ½ inch thick.

By use of the same 1-3-(10 percent lime) mix as before described, we arrive at this simple formula.

1 bag of Portland cement
3 cu. ft. of sand
10 lbs. of hydrated lime

This mix will result in 3 cubic feet of plaster mortar and it will cover at

¼" thick—144 sq. ft. .....second coats
½" thick— 72 sq. ft. .....regular coats
¾" thick— 48 sq. ft. .....brick work
1" thick— 36 sq. ft. .....rubble stone

The regular or ½ inch coat is most generally used.

The sample house, 24x30 feet, has an exterior perimeter of 108 lineal feet. It is usually safe to figure from the underside of footing to 2 inches above grade level; and, if this distance is 5 feet, this would give a total of 5x108 or 540 square feet and would require—if 1 bag of cement equals 72 square feet ½ inch thick then 540 square feet divided by 72 equals 7½ or 8 bags; if 3 cubic feet sand equal 72 square feet then 540 square feet require 540 divided by 72 multiplied by 3 or 22½ cubic feet. Order 1 cubic yard; or if sold by ton, 1 ton.

Hydrated lime requires 8/10 bag. Order 1 bag.

Interior plaster—The formulas for this work are the same except that the amounts are greater as the height is usually 7 feet. In this instance the INSIDE perimeter is approximately 105 feet x 7 feet high, which equals 735 square feet.

then to cover 720 square feet will require.10 bags
balance will require ..... 1 bag

TOTAL .....11 bags

If 1 bag of cement will cover 72 square feet
then 720 sq. ft. equals 10x3 or..... 30 cu. ft.
balance required for extra bag..... 3 cu. ft.

TOTAL ..... 33 cu. ft.

33 cu. ft. equals approximately 1¼ cu. yds.
or, if sold by the ton—approximately 3,000 lbs. or 1½ tons

Colors—of course can be added to meet the customer's wishes. The manufacturer usually instructs how many pounds or how much should be used per bag of cement or per cubic foot of mortar; and having both, it becomes simple to develop the correct quantities for him.

Recommended practices for storing—Cement, lime, gypsum, and similar products should be stored in a dry, elevated warehouse.

If railroad siding is available, storage floor should be approximately four feet above track level to facilitate loading trucks and unloading cars.

Ceiling height should be 10 feet—two entrance doors, 4 feet wide—should be centered, face each other and provide passageway.

Floor space should be figured that each tier of bags will require 2 square feet and each bag will occupy approximately 1.25 cubic feet.

To store approximately 2,000 bags of various items, with bags piled 7 to 10 high and with a 1 foot to 18 inches clearance between piles and all exterior walls, will require a building about 22x24 feet or its equivalent.

In making deliveries to customers, always keep the stock pile fresh. Load the oldest shipments first because of the tendency for stored products to acquire "warehouse pack" which causes the bags to appear hard. Actually, the contents may be, and usually are, entirely sound and usable and "rolling" them prior to loading will restore them to their original state.

DEALERS Remember!

Every cellar, garage, cistern, pool, milkhouse, stable, pen and dairy barn needs THORO-SEALING, to keep water out of the walls.

If your contractor, homeowner or others have a problem with water or dampness, The THORO System will correct and solve the problem.

WATERPLUG . . to stop the leaks
THOROSEAL . to fill & seal the surface
QUICKSEAL . for a beautiful finish

WRITE FOR DEALER PLAN AND DESCRIPTIVE CIRCULARS

THE THORO SYSTEM Products make friends, new customers and a substantial profit for the dealer

STANDARD DRY WALL PRODUCTS INC.

Box X, New Eagle, Penna.
Telephone Monongahela 67

THE Thoro System

Increase your business with

MEDUSA

"JOB-FITTED" CEMENTS

Dealers constantly are telling us how they increase their sales in all lines with Medusa "Job-Fitted" Cements. Instead of selling just any cement to a customer, dealers are finding out how the customer is going to use the cement. Then they sell him the Medusa "Job-Fitted" Cement best suited for that particular work. This results in giving the customer a much better construction for a modest difference in cost. The customer long remembers that service. He's loyal to the dealer who sold him a better cement and he gives other business to that dealer on the strength of that satisfaction.

To help increase your business, Medusa has created a booklet full of profitable sales ideas called "A Plan to Increase Cement Sale Profits with Medusa Special Cements." We will be glad to send you a copy upon request.

MEDUSA PORTLAND CEMENT CO.
1046-1 Midland Building • Cleveland 15, Ohio
"Fifty-Seven Years of Concrete Progress"

Reg. U. S. Pat. Off.
MEDUSA 7 PRODUCTS INCLUDE

MEDUSA WATERPROOFED GRAY PORTLAND CEMENT
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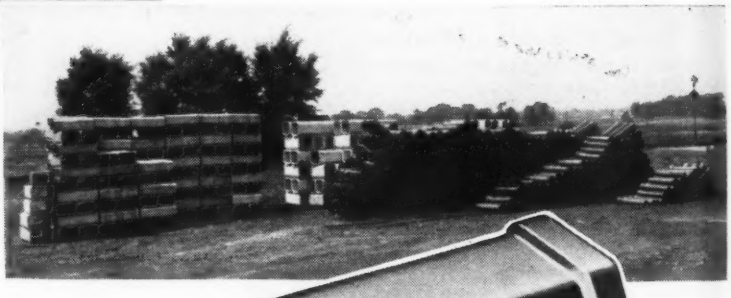
MEDUSA AIR-ENTRAINING PORTLAND CEMENT
MEDUSA "MEDCO" HIGH EARLY STRENGTH CEMENT
MEDUSA STONESET MASONRY CEMENT
MEDUSA BRIKSET MASONRY CEMENT

DEALERS' FAVORITE FOR OVER 50 YEARS



VITRIFIED CLAY PIPE IS FIRST CHOICE OF DEALERS WHO DEMAND A STEADY, YEAR-ROUND PROFIT

HUNDREDS of "third and fourth generation" dealers vow their faith in Vitrified Clay Pipe as the most reliable profit line they've ever handled. They know that there always has been — and always will be — a consistent demand for Vitrified Clay.

Clay Pipe never wears out. It is the *only* pipe that resists deterioration, corrosion and rust. It stores easily and economically outdoors. You can count on the steady inventory value of Clay Pipe, free from wide fluctuations. Through the years a good complete stock of Clay Pipe, Fittings, Flue Lining, Chimney Tops and Septic Tanks has been a sound, money-making investment.

Make sure your stocks are complete—*today!*

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522 First National Bank Bldg., Atlanta 3, Ga.
1105 Huntington Bank Bldg., Columbus 15, Ohio
703 Ninth and Hill Bldg., Los Angeles 15, Calif.

Vitrified CLAY PIPE

CLAY PIPE NEVER WEARS OUT!

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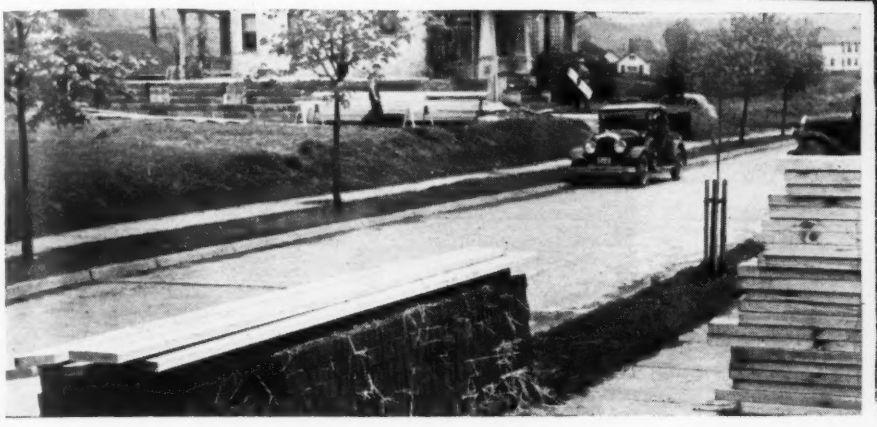
Section 21

Clay & Tile Products



VERY DEALER interested in selling a complete construction job—residential, commercial or industrial—must stock clay products. This is another important step in controlling the complete sale.

Although there are many kinds of brick manufactured for special purposes, brick for building construction may be divided into two broad classifications viz: facing brick and building (or common) brick.

Most brick are formed by one of the three processes, i.e. "Stiff Mud," "Soft Mud," or "Dry Press."

In the stiff mud process, the clay is forced by means of an auger or screw through a die, much as tooth paste is pushed out of a tube. The clay column is then cut at the desired length to produce the brick.

In the soft mud process, the clay is mixed wet to make a soft mud or paste and formed by light pressure in a mold. When the mold is lubricated with sand, the brick are knows as "sand struck." When lubricated with water, the brick are known as "water struck."

In the "dry press" process, a much smaller amount of water is used. The clay is relatively non-plastic, and the brick are formed in molds at pressures of from 550 to 1500 pounds per square inch.

The standard size of non-modular brick, as established by simplified practice is 2¼ x 3¾ x 8 inches. This size is not available in some parts of the country and the purchaser should ascertain the sizes available in his area.

In 1946 the structural clay products industry adopted standard sizes for modular clay masonry units. Today approximately 50 percent of the production of the industry is available in modular sizes. The nominal size of 2⅔ x 4 x 8 inches represents the majority of this production. The nominal size indicated includes the thickness of one mortar joint in each dimension. For example, the standard size of a brick designed for a ½ inch mortar joint would be the nominal size of 2⅔" x 4" x 8" less the thickness of the mortar joint or 2⅛ x 3½ x 7½ inches. Standard joint thicknesses are in general as follows: ½ inch for backup and structural units, ⅜ inch and ½ inch for facing units, and ¼ inch for glazed facing units.

By the very nature of its manufacture, brick is highly fire resistant. Brick masonry is more fire resistant than most any other form of conventional construction.

BUILDING (COMMON) BRICK

Building brick goes through the regular process of manufacture without special attention to enhance its value. However, as noted above, there are several different processes by which brick are shaped, but they all converge at one point, where they are dried to a certain low percentage of moisture and then burned. The burning divides them into other classes.

Bricks nearest the fire are always overburned. When placed on the market, they are called "arch" or "clinker" brick. They are very hard and somewhat distorted in shape. The color is usually dark, being practically black on one face. If the color of clinker brick is not objectionable, there are many places where their use is desirable. They are hard and durable and absorb less moisture than other types of common brick.

Bricks furthest away from the fire are called "salmon," "pale," or "soft" bricks. They are low in strength and lack uniformity in color. They are often used for filling in thick wall construction and for backing up in places that are not exposed, or where strength is not an important factor.

The "body," "cherry," "stretcher," "red," or "hard" bricks are those located in the kiln between the clinker bricks and the soft bricks. The names mentioned are used interchangeably in different sections of the country. They are regular in shape, size and color; they are neither underburned or overburned and they constitute the greater portion of the product of the kiln.

The minor variations in brick sizes are provided for by the architect and bricklayer in the thickness of the mortar joint. However, standard specifications provide permissible maximum variations from the specified size, plus or minus, of 3/32" in height, ⅛" in width and ¼" in length for standard size brick. Bricks of standard size weigh approximately 4½ pounds.

Estimating brick construction

An estimate of the number of brick required for a given wall can be made by figuring 6.75 standard modular brick to every square foot of outside wall surface for a wall 4 inches in thickness. An eight inch wall would be two bricks thick, or double the number for a four inch wall. This rule applies to the standard modular brick. For additional accuracy, window and door openings should be

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deducted. In addition an allowance (usually 2%) should be made for breakage and waste.

Carefully piled or stacked, considerably large quantities may be placed in restricted storage areas; for example,

Common brick stacked 5 ft. high x 18" wide x 1 ft. long will accommodate—150 brick or approx. 100 brick per sq. ft. Thus, 10,000 brick can be stacked in a space (not including aisles) of 100 sq. ft. or with 3 ft. aisles on each side and, a square 16'x16' would comfortably house 10,000 brick (at 5' height). For each foot more or less in stack height, add or deduct 2,000 brick.

Other clay products, such as flue lining, drain tile, coping, soil pipe, and fittings, also lend themselves to economic storage space facilities.

Minimum stocks

In general, sufficient material should be available to service three ordinary house jobs at all times and it should consist of

*Common brick (for chimneys, fireplaces, area ways, sills, lintels, etc.).....
Misc. purposes .....
Minimum (not inc. veneer jobs).....

**Common or face brick for brick veneer jobs will average approx. 12,000 brick per job .....

Flue lining—this is commonly specified in three sizes: i.e., 8"x8", 8"x12", 12"x12". The average house will require approx. three flues, either separate or built together, and on the basis of 1½ to 2 story houses will have an average length of 30-32 ft. per flue—consequently minimum stocks for 3 houses are:

8"x8" flue lining (in 2' lengths)—50 pcs. or 100 L.F.
8"x12" flue lining (in 2' lengths)—50 pcs. or 100 L.F.
12"x12" flue lining (in 2' lengths)—50 pcs. or 100 L.F.
"Thimbles"—assorted sizes—6", 8", 10"—12 of each size. This should be yard stock.
These should be ordered for the job, either common or face per specification.
Drain tile—This comes in two types "U" shaped or round—4" in diameter .....400 l.f. of each
Glazed clay soil pipe for drains, leader connections, etc., 3" and 4" in 2 ft. lengths.....200 l.f. of each
Glazed clay soil pipe fittings:—Ells, sweeps, tees, branches, "Y" fittings in two sizes—
3" and 4" .....12 of each
Face brick—for steps, porch borders, fireplaces, sills, lintels, chimney caps, etc., (*not incl. veneer jobs)—usually supplied in several colors and surface textures or finishes—depending on sources and varieties, minimum stock of "best sellers".....1,500 of each

RECENT DEVELOPMENTS have produced some amazing pre-cast clay and tile products. Shown above are pre-cast tile joists being installed in a small building.

THE USES of clay and tile products are extremely widespread on the farm; not only for homes and buildings, but for silos, etc., and for the ever present problem of proper drainage.

(*) For veneer jobs, these should be ordered specifically for each job.

Fire brick (whole) for fireplace backing..... 300
Fire brick (split) for fireplace hearths..... 150
"Quarry tile" for fireplace hearths, entries, etc., either 4"x4", 5"x5", or 6"x6" (usually 4"x4" is best)
.....200 sq. ft. of each
Glazed clay wall coping for 8" wall..... 100 pcs.
Glazed clay wall corners and ends..... 12 each
*Ceramic or Vitreous tile for floors.
*Decorative tile for wainscot.
*Ornamental chimney pots.
*Structural Terra Cotta.
*Ornamental Terra Cotta.
*Other clay products specialties.

*These items, in the majority of cases, can be ordered either as materials to be delivered or as a complete installed service by a tile contractor. The time element, because they are not required immediately, is usually ample for the dealer to arrange for a satisfactory delivery schedule.

CLAY AND TILE IN FARM BUILDINGS

Clay and Tile Products on the Farm: Clay and tile building products are in constant demand on the farm, particularly structural tile for use in silos, barns, and stock buildings. These products have found particular favor in dairy barns where cleanliness is essential.

There is also a constant demand for drainage tiles; especially since the country's leading agricultural colleges and governmental agencies are conducting a widespread educational program for more effective soil conservation through correct drainage.

Suggestions for Displays

Brick manufacturers and distributors have, by mounting "split" brick into framed display panels in various colors, textures, bonds, mortar colors, kinds of joints, provided an excellent means of brick display which, because they actually have "the feel," are more effective than colored photographs.

Tile manufacturers have, likewise, developed sample display boards including the mounting of essential bathroom and kitchen accessories. These should be obtained and used.

Each of the above can (by planning a functional layout) be converted into a most attractive display; one which can be easily altered to correspond with either available stocks or possible changes in sources of supply.

In addition to the above, illustrated pamphlets and folders should be available for distribution to interested prospects.

FACING BRICK

Facing brick is used to make the outside or exposed surface of any brickwork construction. It is selected for a particular color, texture, finish or uniformity.

BRICK MOLDING

Brick molding is rather heavy molding usually about 1⅛" x 1¾" in cross section. It is generally used as a part of a box window frame. Its position is just outside the blindstop and its purpose is to cover the right-angled joint between frame and brick. At least two sizes and usually two entirely different patterns are carried in stock by wholesale warehouses. Staff bead is another common name for the same thing.

BRICK VENEER

This is a very common type of house building construction in which a wall of brick, usually the width of one brick in thickness, is built up outside a regular wood frame. The brick wall contributes no strength to the structure; on the contrary, it must be partially supported by it.

The foundation must be strengthened to support the additional weight. Wood sheathing is applied to the studding and ties are inserted at regular intervals to maintain the alignment. The brick actually takes the place of the siding which is, of course, omitted.

Brick veneer is popular from the standpoint of appearance and the fact that exterior upkeep is reduced to a minimum.

STRUCTURAL CLAY TILE

This is a very useful structural material in which clay is formed into a hollow masonry unit having parallel cells and burned to hardness. It is used for floors, roofs, partitions, walls, and foundations. Because of its lightness, strength, fireproof qualities and resistance to moisture, it has become a widely used and very satisfactory building product.

Structural clay tile may be broadly classified into four groups, based upon the use for which they are intended. They are:

1. Structural Wall Tile
2. Fireproofing Tile
3. Structural Floor Tile
4. Miscellaneous Tile

Structural wall tile, which may be either loadbearing or non-loadbearing, is used for the construction of exterior and interior walls and partitions.

Fireproofing tile is used for protecting structural members, particularly steel girders, beams and columns against fire.

Structural floor tile is used in tile arches, and as tile fillers in conjunction with reinforced concrete joist, or as span tile in combination with precast reinforced tile and concrete beams.

Miscellaneous tile units include structural roofing tile, conduit, units for the construction of storage structures such as silos and bins, shapes such as raggle blocks, copings, sills and lintel tile, filter and drain tile.

TERRA COTTA

Terra cotta means "cooked earth." The term could be applied to any object made of burnt clay from the rudest brick to the finest pottery. Traditionally, the terms have been separated, so that pottery is taken to mean the making of vessels and terra cotta refers to almost everything else.

Terra cotta is used for small statuary and other objects of beauty; decoration for interiors; for frieze, cornice and panel decoration and on the outsides of buildings. It is still used for architectural decoration where the desire for beauty is more important than the cost. Colors can be applied to the surface before baking and seldom show the fading effects of the sun.

MASONRY CONSTRUCTION

The construction used in building where all of the outside walls are built up wholly of brick or stone. In masonry construction the inside partitions, the floor joists, the ceiling joists, the rafters and roof materials, window and door frames as well as flooring and interior finish, can be and usually are, of materials that can be furnished by the retail lumber industry.

CLAY and tile products should be carefully stacked and protected from the weather.

DESCRIPTION OF RELATED ITEMS

Item Description-function	Refer to Sec. No.	Minimum Stock required
1. Metal wall ties—to bond veneer walls or face brick	2	2000
2. Metal nailing inserts to secure furring	5	2000
3. Metal wall anchors—and joist hangers and stirrups	2	100 each size 50
4. Angles irons to carry load over openings in walls	2	each size 20
5. Clean-out doors to permit ash removal	2	each size 10
6. Coal chutes—for fuel delivery to bin	2	6
7. Ash dumps for fireplaces	2	6
8. Heat-saver fireplace units or Dome dampers for fireplaces	2	each size 3 each size 3
9. Re-enforcing rods for hollow tile floor construction	2	each size 200 L.F.
10. Structural I-beams or channels	2	(special order)
11. Cement, mortar, sand, lime and concrete	17	(see minimum as described in sections)
12. Mortar colors	17	(see minimum as described in sections)
13. Paints and coatings	17	(see minimum as described in sections)
14. Mason's tools	5	(see minimum as described in sections)
15. Metal window frames	2	(see minimum as described in sections)
16. Scaffold material	1	(see minimum as described in sections)

Proven methods of handling these products

To be able to give prompt service, the dealer should carry in stock the "fast moving" or emergency items both as to clay products and also those essential related items.

Clay products themselves are comparatively simple to store. There is little or no danger of spoilage or inventory shrinkage and the only positive requirements are: (a) reasonably dry (preferably slightly elevated) ground near R.R. siding to expedite unloading; (b) reasonably adequate shed type shelter to ward off rain or snow.

"The Lumber Mutuals"

More than fifty years' service to the Lumber Trade in fire prevention engineering and sound protection at a savings.

Write or phone the nearest office.

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LUMBER MUTUAL FIRE INSURANCE COMPANY
BOSTON 15, MASSACHUSETTS

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LUMBERMENS MUTUAL INSURANCE COMPANY
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PHILADELPHIA 7, PENNSYLVANIA

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Nation-wide facilities for individual attention to your property insurance problems.

FIRE — EXTENDED COVERAGE — BUSINESS INTERRUPTION

Section 22

Financing and Insurance

SINCE THE FIRST RULE of successful selling is "Make it easy to buy," the building products merchant should know all there is to know about consumer sales financing and installment credit. With this knowledge at his fingertips and a sales financing plan available in the store, the dealer will be able to talk in terms of so much a month instead of the whole price for a remodeling job or building a home. And he will encourage his customers to make more purchases.

When the dealer can arrange the credit in his own place of business, on the job, or in the customer's house—as he can with installment selling—then he does make it convenient for people to buy from him.

Nor must he put the customer to the trouble of going to a lending agency for a loan. When that happens, he becomes a cash shopper, a price shopper; he looks around.

More than 50% of all monthly payment purchases are made by people who could pay cash but prefer to pay in installments.

As for mortgage loans, the Housing Act of 1948 contains news, liberal provisions that may relieve some of the difficulties of obtaining financing during the past year. To date, however, it is impossible to determine exactly just how this legislation will affect construction as complete interpretations have not been made.

In effect, however, the amounts of mortgages insured by FHA have been increased on Title 1 and Title 2 loans. Title 1 Class 3 loans may now be obtained from FHA lending institutions up to $4,500 instead of $3,000, the previous limit. Monthly installments are payable over a period slightly over 20 years. Interest cannot exceed 4½ percent. The borrower must own the land on which the home is to be built and must have an equity of 6 percent in the finished property. Land ownership may constitute all or part of this equity.

Under Title 2, loans of $6,000 may be granted on homes costing $7,000, or 90 percent of the cost. On homes costing up to $11,000, $9,500 may be obtained. This is 90 percent of the first $7,000 and 80 percent on the other $4,000. Homes costing up to $20,000 may be mortgaged up to 80 percent. These limits are somewhat larger than they were under the old law.

Consumer Sales Financing will do these things:

- Facilitate closing of sales
- Increase sales volume
- Lower resistance to price
- Improve cost position
- Attract new buyers
- Give sales control
- Provide control of building trades
- Lower credit losses
- Serve more customers
- Build individual sales higher, wider and thicker
- Facilitate complete handling of consumer needs
- Enable salesmen to sell full list of related items
- Control specifications
- Enlarge specifications to include mechanical appliances
- Keep assets liquid
- Improve effectiveness of advertising.
- Lower accounts receivable
- Improve competitive aggressiveness (autos, furs, vacations, etc.)
- Meets competition on equal basis—convenient payments
- Capitalizes on consumer buying habits
- Lowers competitive effectiveness
- Collection annoyances minimized
- Makes "package" selling automatic
- Provides profit on construction labor as well as materials
- Irons out seasonal sales slumps
- Secures a bigger share of consumers' dollars
- Every department of a dealer's business is benefited

The principal problems of dealer sales financing are:

- Home financing for consumers
- Rental home financing
- Construction loans.
- Accounts receivable credits
- Farm Construction Credits
- Specialty sales
- Commercial improvement sales
- Departmental sales
- Refinancing mortgages for additional repairs and improvements
- Financing repair and improvement packages
- Financing consumer sales of $60 or more
- Rediscounting consumer paper
- FHA insured loans

Sources of Financing Services

(If you are not adequately serviced by local, regional or national sales financing agencies, American Lumberman & Building Products Merchandiser will suggest sources of such service.)

- Financing Companies specializing in servicing dealers
- Building and Loan associations
- Insurance companies
- Commercial banks
- Savings banks
- Mortgage bankers
- Investment bankers

Private investors
Farm Security administration
Rural Electric administration
Farm loan banks

The financing companies who undertake to service your sales will supply:

All the necessary forms and blanks
Rate charts and tables
Training for your salesmen and credit men

What Sales Financing will do for consumers:

Enjoy better housing while paying for it
Build an estate
Bring greater security
Savings from improvements often pay for them (insulation and paint)
Cultivate the savings habit
Enjoy independence of landlords
Better citizenship and sound credit standing
Better environment for children
Avoid high moving costs
Save the landlord's profit
Monthly payments as little as or less than rent
Improve credit standing

The Package Mortgage

Something new under the sun in mortgage financing that has great potentialties for the lumber and building products mechant is the Package Mortgage.

Certain large insurance companies and other mortgage buyers devised a plan where the complete mechanical equipment of a modern home can be included with the land and house in a first mortgage to be amortized over a long period of years.

This means that a home seeking family can enjoy all the needed mechanical conveniences at a monthly payment less than a single appliance would have cost under the former 18 months plan.

The Package Mortgage affords a dealer who controls home building sales an immediate and sizable volume for his mechanical departments.

Package Mortgages may include either gas or electric appliances.

Salesmen's Tips on Financing

Assume the buyer will appreciate convenient terms.

Always quote the monthly payment first on every sales involving more than $60.

Try to build sales higher, wider and thicker when initial job is small by selling needed related items.

Suggest a down payment on each transaction.

Prepare all credit statements completely at the time the order is secured.

Know F.H.A. procedure thoroughly and keep abreast of changes in regulations.

INSURANCE

The variety and complexity of laws and regulations, local, state and national, concerning insurance, social security, employers' liability, etc., make it a physical impossibility to write even a brief treatise that will fit each reader's problems.

It is recommended that each dealer have a semi-annual check up with his own or his association's lawyer on such problems.

Liability, casualty, surety and insurance companies serving the dealer are also a source of valuable information.

However, the following check list indicates a few of the problems in this field.

Insurance required by mortgage finance companies.
Insurance required by Installment Credit companies.
Group Liability Insurance.
Group Life Insurance.
Hospitalization.
Insurance contractors used on light construction projects.
Riot, airplane damage and civil commotion insurance.
Auto and trust insurance.
Fire insurance.
Tornado insurance.
Public liability.
Plate glass insurance.
Workmen's Compensation.
Burglary insurance.
Use and company insurance.
Casualty insurance.
Fidelity and Surety bonds.
Job completion bonds.

The placement and control of this business gives the dealers an extraordinary goodwill building opportunity.

★INCOME FOR HOUSING		VALUE OF HOME WHICH INCOME FOR HOUSING WILL FINANCE									DOWN PAYMENT (Fill In Below)	TOTAL AMOUNT YOU CAN SPEND FOR A HOME
		At 4 Per Cent			At 5 Per Cent			At 6 Per Cent				
Monthly	Annual	10 Years	15 Years	20 Years	10 Years	15 Years	20 Years	10 Years	15 Years	20 Years		
$ 15	$ 180	$1110	$ 1380	$ 1580	$1070	$ 1320	$ 1500	$1030	$ 1270	$ 1420		
20	240	1470	1850	2110	1430	1760	2000	1380	1690	1890		
25	300	1840	2310	2630	1790	2210	2500	1720	2110	2360		
30	360	2210	2770	3160	2140	2650	3000	2070	2540	2830		
35	420	2580	3230	3680	2500	3090	3500	2410	2960	3310		
40	480	2940	3690	4210	2860	3530	4000	2760	3380	3780		
50	600	3680	4620	5260	3570	4410	5000	3450	4230	4720		
60	720	4420	5540	6320	4290	5290	6000	4140	5070	5670		
80	960	5890	7380	8420	5710	7060	8000	5520	6760	7560		
100	1200	7360	9230	10,530	7140	8820	10,000	6700	8450	9450		
125	1500	9200	11,540	13,160	8930	11,030	12,500	8620	10,560	11,810		

This table will help you to arrive at a beginning figure only. ***Consult a reliable lending agency and consider your own modifying factors.*** For example, if less than $20 per year per $1000 is required for upkeep, the difference may be treated as an increase in available "income for housing." ***Remember that the down payment reduces amortization cost, but adds to the total value of the home*** This increases the cost of taxes, insurance and upkeep, which must be paid from income for housing. For small down payments the difference is unimportant; for large down payments it is considerable. On the basis of figures used for the table, each $100 down payment requires about $4 more *annual* income for housing to pay for taxes, insurance and upkeep on the additional property value.

BOOKS *for* LUMBERMEN

THE LUMBERMAN'S ACTUARY

By John W. Barry

Shows at a glance the value of any number of feet between two and 29000 at prices from $6 to $150 a thousand at price increments of 25c.

Shows board feet contained in up to 2000 pieces in thicknesses from one inch up to 12 inches and for any width from 2 to 24 inches.

Tables show how to figure cost of any number of thousands of lath or shingles from $4 to $15.75 a thousand. Also for figuring moldings, lumber bills, car freights, car invoices, yard inventories, wages, etc.

Also contains tables of measurements on wall board in 32- and 48-inch widths; shows number of square feet in ceilings and walls of rooms of various sizes; for estimating the quantities of various items of lumber, shingles, etc. to cover given surfaces.

A feature of this book is the linen faced, cut-in index which brings all sizes and prices under the eye at a glance. All lengths are on the same page.

Size 4⅝ x 8¼ in.; 504 pages; bound in leather. Price, delivered, $10.

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By H. R. A. Baughman

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Pocket edition, 3⅝" x 5⅝", 187 pages, price delivered $2.50.

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James S. Kemper, chairman H. G. Kemper, president • Mutual Insurance Building, Chicago 40

Office and Store Equipment

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Inventory Records 467
Store Layout 468
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JUST AS THE right type of mechanical handling equipment in the lumber yard reduces operating costs, so efficient office equipment will reduce administrative costs.

Office machines and systems are available which are especially designed for the building products merchant. With these he can see which departments are operating profitably and which need checking and reorganizing.

OFFICE MACHINES

The amount and type of office machines required by a dealer, of course, depends on the size of his business. There is, however, a wide selection of office equipment of all types, designed to increase the efficiency of this very important branch of the operation. Among these are:

- Accounting machines
- Adding machines
- Addressing machines
- Autographic registers
- Billing machines
- Bookkeeping machines
- Calculators
- Cash registers
- Check writers
- Comptometers
- Continuous form registers
- Correspondence files
- Dictating machines
- Duplicating machines
- Inter-office, yard communication systems
- Metered mail machines
- Payroll machines
- Safes and strong boxes
- Time stamps
- Time clocks
- Typewriters

RECORDS CAN INCREASE PROFITS

Records should be the most valuable assets of a building supply company operation. That is what they become when they are designed and used for direction and control of every phase of the business. Then they point to innumerable ways to increase sales and to reduce costs. When they show how to get more business and to handle it more profitably, they are doing the job they ought always to do.

Without good records and the direction and control they make possible, it is out of the question to avoid losses and needless profit leaks. Nobody, no matter how well he knows his business and how closely he keeps his fingers on what goes on, can remember and connect up the multitude of details correctly without recourse to records. That is the main reason for records and adequate record protection against fire and other hazards.

Financial Records Are Basic

Buildings, trucks, furniture and stocks of many kinds of building materials have to be inventoried and valued in money. To be understandable and understood, all the transactions of any business must be reduced to money terms and expressed in financial statements that summarize the net results.

Today a patented accounting board has been adopted by many small businesses to give them the same quality of accounting control for management purposes that large organizations get from their large staffs of accounting department employees and elaborate machines.

The principle of the system is simple. Instead of writing the same entry three times with three possibilities of a mistake, a single writing produces three records. For example, a single writing produces an invoice, an entry on an accounts receivable ledger card and a journal entry. If one is correct, all are correct. A single writing when making up a payroll prepares the employee's pay check or earnings record, the history earnings record for Social Security report and the payroll register.

Of importance to the dealer is the financial control obtained as a byproduct of the journal posting. The seven major control accounts needed in a distributing business are posted to a single journal which is a complete daily financial statement. Each day, when the last posting has been made, the columns and lines are added and entered. The key figures are the column totals. To them are added the balance forward from like columns for the day before. This provides a daily statement of condition for the year to date, with a proof of balance.

With this system, a building supply company owner has daily knowledge of his entire financial picture. With this control, he can take steps at the first sign of warning to forestall trouble. If too much money is getting into inventory, he knows it at once. If collections commence to lag, he is aware of it immediately. When a condition is known and understood, it is more than half corrected, for steps can be taken to fix it.

Subsidiary Records for Profit Control

There is no substitute for exact knowledge of overall financial position. The overall financial reports are summaries that point directions of approaching strengths and dangers. They are not intended to show details. Subsidiary records are necessary to give details control. Summary and detail records should go hand in hand to round out complete administrative control.

To be efficient, they should be so set up that the things that need attention can be stopped quickly and acted upon promptly. This is best accomplished through signal control on visible records designed to include all the important facts and to exclude all useless information.

There are two principal methods of handling accounts receivable. The first is the ledger method in which an accounts receivable ledger card is set up for each account and debits and credits are posted manually or by machine.

The second is a ledgerless accounts receivable system called the Simplified Unit Invoice accounting plan. This method greatly simplifies the taking of trial balances and the aging of balances. It is self-analyzing so that no one has to spend hours analyzing accounts to find out which are past due. It picks out the accounts that need collection effort at a glance. It gives complete control. It saves time, and frees clerical time for other important work. It cuts down credit losses and makes credit work easier.

Instead of posting to a ledger, the accounts receivable clerk or the bookkeeper simply files an extra copy of the invoice in a visible pocket which is indexed by the name of the account. If the invoice being filed is the only one outstanding, the clerk moves a signal over the current month. If there are other invoices outstanding, the signal is not touched. That is all there is to posting an invoice — just drop it into a pocket and perhaps move a signal.

When a payment is received, the procedure is equally fast. If the payment covers one invoice or a number of invoices exactly, those paid are pulled from the pocket, stamped Paid and date stamped, and filed away in a paid invoice file. If the invoice paid extinguishes a debt for a month, the signal is moved to show the age of the oldest remaining unpaid balance. If the payment covers only part of an invoice, a partial payment slip is filled out in duplicate. One copy is attached to the invoice. The other copy goes into the paid invoice file. Trial balances are taken by adding up all the invoices in the pockets.

All past due accounts can be seen at a glance, because the signals are over a month that has passed. All inactive accounts can be spotted, because their signals are pushed back where they cannot be seen.

Keeping Inventory Records

Building supplies cost money to own. To be profitable, they have to be turned over at economical rates, so as to make the cost of acquiring them equal to the cost of disposing of them.

It is not enough to be sure from the financial statement that the total value of inventory is in line with sales and with other balance sheet items. It is easily possible for an inventory to meet all financial tests and still be badly out of balance with excess stocks of some things and shortages of others. One safeguard against this risk is a well designed visible stock control record that signals the condition of each item all the time.

An effective stock control record incorporates a number of important features that save time and money and prevent over or understocked conditions by signalling stock condition in terms of time it will last. In addition to the record of receipts, disbursements and balance on hand which a stock record includes, a stock control record has a moving signal traveling over a computing chart to show at a glance how much of each item is in stock and how many weeks it will last.

Two other important features distinguish a stock control record from a stock record. The first is a summary card that shows past sales experience by months with annual totals. This is an invaluable aid to studying trends

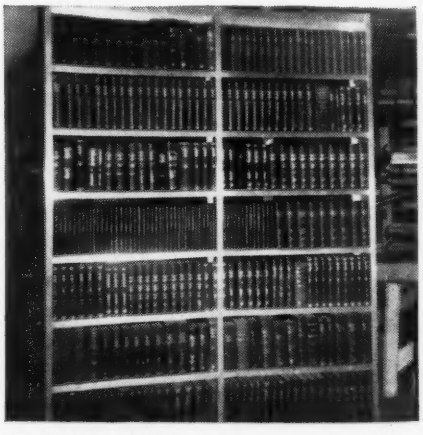
Modern Office Machines Reduce Administrative Costs

SINGLE writing produces three records with this multiple accounting system.

WITH simplified invoice system, pocket holds one account; signals delinquent ones.

ONE style of revolving file requires no punched holes; keeps cards right at hand.

FILES which pull down easily offer ease of operation, large storage space.



ALUMINUM shelving offers a sturdy, lightweight storage space; can be easily moved.

PERSONALIZED letters can be typed in quantity on a new automatic typewriter.

STORE LAYOUT

Considerable attention is being given to the proper arrangement and layout for the modern building material store, and many highly efficient sales plants have been individually designed and put in operation throughout the country.

There are, however, so many variable factors that exist in this field, it is not practicable to establish any "rule of thumb" formula that would apply to all retail building products operations.

So much depends on the dealer's objectives in setting up a store, his location, the type of merchandise to be displayed, the space available, and many other considerations. For that reason it is highly advisable to plan and develop a sales area as a result of an individual study during which all of the variable factors are taken into consideration and provided for.

There are, however, a few fundamentals that apply to all layouts, all of which are essential for the best in good planning. First of these is the shape of the sales room. The most satisfactory is rectangular or square; and if rectangular, the narrow dimension should be at least 30 feet.

The placement of the office and sales counter should demand traffic through the store to it. A counter immediately inside a main door eliminates store "shopping" and decreases the amount of spontaneous sales a store can otherwise produce.

Decorations should be neat but not elaborate. The primary function of a store is to display merchandise to best advantage, and frequently, a too elaborate room decorative scheme will detract from the merchandise.

Display arrangement should be regimented by types of products, and each department or major display fixture should be clearly identified. Slower moving items should be placed in the main traffic pattern through the store, with the more popular items in such a position as to draw customers through all parts of the store.

All merchandise should be priced. This is one of the major essentials of good merchandising.

HERE the space under the sales counter has been attractively designed to display fireplace equipment.

NOTE how the paint department shown above "invites" store traffic into it.

DISPLAY FIXTURES

There are several manufacturers in the United States who manufacture specially designed fixtures for building products. Many manufacturers of materials have also developed effective fixtures for their own products that are available to the dealer. For the most part, however, the dealer has had to do his own design work, and in many cases has built his fixtures in his own shop.

As with store layout, however, there are certain fundamentals of good display that should be considered before deciding on the type and sizes of fixtures in a store. Some merchandise can be best displayed on a wall cabinet, and when arranged on an island, fails to exhibit itself to proper advantage. Conversely, other merchandise on a wall cabinet could be shown in a more compact space on an island.

STORE FIXTURES

Store fixtures serve only the purpose of holding and containing the products in a store. Their design must be made from the standpoint of good visibility, ease of store maintenance, and proper exhibition of the products. In themselves, they should not be elaborate to the extent that they detract from the merchandise. Therefore perfectly adequate fixtures need not be expensive.

Above all, however, all fixtures in a store should be movable. A store area should be flexible to the point that a complete rearrangement could be made at any time without disturbing any of the room fittings. This is even true of wall cabinets.

AMERICAN LUMBERMAN, recognizing the need for the latest information on store layout and fixture design, is serving the dealers of the country as the clearing house for all worthwhile data that comes to its attention. Any dealer with a specific problem is invited to write in for a personal answer to his question.

HELLER STORE FIXTURES ARE THE BEST

COMPARE HELLER FEATURES BEFORE YOU BUY

New Modern Styles—Better Built—Assembled & Finished — Larger Selections — Conventional Styles—New MULTI-LEVEL Styles.

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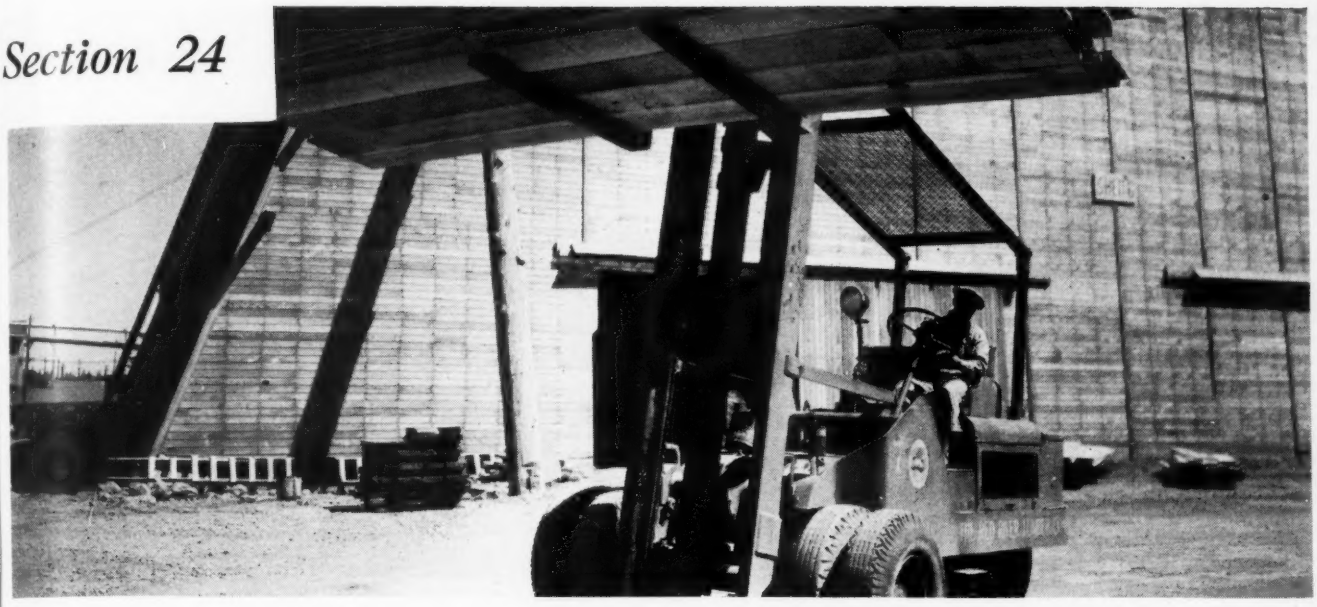

Machinery and Equipment

THERE ARE MANY types and kinds of machinery and equipment that the present day building products merchant can use to increase the efficiency of his operations. Today, more than ever before, dealers are analyzing the application of these mechanical facilities to their own business for the reduction of time and effort in all phases of material handling or fabricating which has a marked bearing on profits.

Since there is such a wide variation in yard layouts and the arrangement of sheds and warehouses, there is no one pattern of mechanization that will apply to all operations. Manufacturers of this equipment, however, have developed various systems by which their products can be applied to every type of yard, and it is highly advisable to call in their trained men to advise how best the equipment may be adapted to a particular set of conditions.

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WOODWORKING MACHINERY

The extent that various dealers engage in the fabrication of lumber as a part of their operations varies considerably; but no matter what type and kind of woodworking service is provided, there is a suitable, highly efficient piece of equipment available. The major types are defined as follows:

Scroll Bandsaws: These saws are available in all sizes depending on the requirements. The most important consideration in determining the suitable size is the throat room necessary to perform the cutting operations to be done. Throat room is governed by the diameter of the wheel.

Scroll bandsaws are highly versatile for certain sawing operations, even to the amount of resawing that the dealer is often required to do. They are also manufactured in sizes sufficiently small to be usable in the home workshop. Thus, they make not only a piece of equipment that the dealer may install in his own shop but an item for resale as well.

Bench Saws: The applications of this type of saw are well known to most dealers. They are primarily suited for ripping, longitudinal grooving and routing of short pieces, cutting to length, etc. Many types are made with a tilt top to permit accurate angle cuts.

Bench saws may be hand or automatically fed according to the volume of work required of it. Blade sizes range from 6 inches up, but the smaller sizes are best suited to light work. They make an excellent home workshop item.

Cut-Off Saws: Cut-off saws are mounted on a long bench for the speedy cross-cutting of lumber of all lengths. Most of these are of the swing type and are adjustable to insure a perfect right-angle cut-off. In all shops where considerable cut-off work is done, a saw of this type is an efficient piece of equipment.

Universal, All-Purpose Saws: In recent years a number of these highly serviceable units have been introduced and have widened materially the latitude of all cutting operations.

These saws are semi-portable in that the saw-table unit may be moved with little difficulty. They are adjustable to perform ripping and cutting operations, may be set to cut at any desired angle, and can be quickly and easily fitted with blades and cutters to serve as a dado machine and shaper.

Their usefulness is almost limitless in all woodworking shops, but to the dealer whose shop requirements are comparatively small, a unit of this type is particularly desirable. In one compact unit he has practically all of the working facilities of a large plant.

The increasing popularity of pre-cutting methods of construction has focused attention on this kind of equipment since it performs all the necessary operations with a minimum expenditure for machinery.

Electric Handsaws: These light, versatile saws have many applications in a yard, and have become extremely popular with craftsmen as well. Many dealers have several of these units in the lumber sheds so that special cutting to meet customer requirements may be done quickly and easily.

They are excellent for cutting plywood, board products, etc., as well as lumber, and the savings in time and effort they afford will make them pay for themselves in a short period. They are also good items for resale to craftsmen and contractors, as they have equally wide utility at the job site.

Jointers

In many instances it is necessary to joint or dress edges. Therefore, it is wise to have a good handfeed jointer. Where there is much long material, requiring the edges to be dressed or jointed, a large jointer with

long tables is best. Many of the newer, smaller jointers are highly versatile. Sometimes jointing of edges is done at a shaper with a special adjustable offset fence. With such a fence mounted, the shaper temporarily becomes an edge jointer. Where material is to be made S4S to size in small lots, the usual procedure is to joint one edge, then rip the stock about ⅛-inch overwidth by turning the jointed edge against the ripping fence. The remaining (just ripped) edge can be run over the jointer, taking off ⅛-inch to dress the remaining edge and to reduce it to the actual width required. Any firm having enough stock to run S4S can save considerable time by using a small sticker.

Edges can be beveled to any desired degree between square and 45 degrees removed on practically any jointer by tilting the jointer fence. If edge-beveling is to be done at the shaper, however, knives must be bevel-ground for the purpose or a special form must be built to hold the material tilted as it is run over the table. Bevels can be ripped with universal-type saws (which are arranged for both swivelling and tilting the saw) as well as with the modern variety saw bench.

Planers

Planing operations generally involve accurate thicknessing. With a planer it is possible to reduce lumber to any desired lesser thickness. Small planers are available to handle material up to 4x12 inches. (There is at least one planer obtainable today that is of still smaller capacity, handling material to a maximum width of 10 inches and a maximum thickness of 2¾ inches.) A few yards may require a larger planer.

Sanders

Most sanding required is on flat surfaces. A hand block belt sander is good for this and for other general-purpose sanding. Small portable belt sanders may be used to advantage. Plywood, wide dimension stock, and different kinds of trim are obtainable already sanded so sanding problems are usually minor ones.

Molders

Most of the moldings needed are obtainable on the market, but there are different ways to produce special moldings. When it is necessary to produce much S4S stock to uniform size, it is well to have a smaller sticker or molder at hand. A 4 inch machine is usually adequate and it can also be used for running various kinds of moldings and other stock of odd-shaped, cross-section. This machine is extremely accurate. Moldings also can be made at the shaper. Special molding heads for given patterns may be applied either to the shaper spindle, to the spindle of a handfeed rip or variety saw, or they may be used on the spindle of one of the highly universal saws. Special cutterheads to which differently-ground knives may be applied as required are also available.

Equipment for Miscellaneous Operations

Small rabbets can readily and safely be cut at the shaper. Large square rabbets (if it is desired to knife-machine them for smoothness) can be more safely made at the jointer. Rabbets that will not show after the material is installed may be made by removing the material with two saw cuts. This is desirable in the case of larger rabbets, for a strip of material is then saved out of the rabbet. Beveled rabbets in window stools can be machined readily by removing the material with two saw cuts.

Dadoing can be performed with a universal saw, a straightline cutoff saw, or with a roller table saw. The roller table saw has a certain advantage in dadoing wide stock that may not be perfectly straight, as when making built-in cabinet ends. With such a saw there is no danger of cutting too deep with the dado head and ruining the work. Instead, the dado cuts may be too shallow in places. It is a simple matter to later clean them out to full and uniform depth with a standard dado plane.

HIGH production molder, top photo, is good for producing S4S stock to uniform size as well as special stock as illustrated. Shapers, bottom photo, can also be used for the manufacture of moldings. Special heads for given patterns may be applied to the spindle.

Grooving and plowing in the direction of the grain can be accomplished with the handfeed ripsaw by mounting the proper dado cutters on the saw arbor and running the material against the fence. It can also be done to advantage at the shaper. Any of the versatile variety saw benches may be used for this purpose and the same work can be done with one of the universal cutoff saws.

Mitering usually refers to cutting the ends of pieces at 45 degrees so they will join up properly to form a square corner without showing any end grain. The pieces can be joined at any angle in like manner. Some mitering can be done on roller table saws and much of it is performed on variety saw benches. Practically any type of miter, or combined miter and bevel, can be cut with universal saws. Such machines are particularly useful for making the compound cuts required on jack rafters and like work.

The best machine for the retail lumber dealer to use for mortising is generally a simple hollow chisel unit of foot-powered type. Tenoning can be done either at the shaper or on a universal saw. However, it is much better to have a single-end tenoner if any appreciable amount of this is done. There is a bench tenoner of single-end type suitable for smaller amounts of light work.

WHETHER it be in the shop or at the job site there is a highly efficient multi-purpose saw available. These units have proved their ability to produce more accurate work at considerable savings of time.

Dust Control

Dust control is of maximum importance in woodworking operations. Dust explosions in woodworking plants rank second only to grain plant explosions, according to the National Fire Protection Association.

A good dust control arrangement covers the following:

1. One or more main exhaust fans with a main and branch exhaust ducts connected to individual hoods at machines.
2. Arrangements at floor level should provide for the removal of such material as may fall to the floor around the machines and be swept up.
3. Dust should be discharged into a collector or separator of adequate capacity.
4. Wood scrap should be collected and transferred to a central storage area.

Three types of dust controls systems are widely used in woodworking operations: (1) mechanical collector systems utilizing cloth bags, (2) large centrifugal depositors, and (3) a group of small centrifugal collectors. These three types may be used alone or in combination, depending upon the scope of the operation.

Good housekeeping is of prime importance in reducing both dust explosions and fire hazards. The plant should be cleaned thoroughly at regular intervals to prevent accumulation of any considerable amounts of finely divided wood dust. Hard-to-reach horizontal surfaces that act as particle traps should be eliminated or reduced as much as possible. If such places exist, they should be so pitched or beveled that dust will not collect. Collect nails and other metallic scrap in separate containers. It takes only a spark to start an explosion.

Fire Control

Fire alarm systems reduce fire loss by notifying fire control departments and building occupants that a blaze has started. Several systems are available from automatic sprinklers to watchman control systems.

Fire control equipment such as fire shutters and fire doors help prevent the spread of fire. Doors may be made automatic by the use of fusible links which are held together by solder that melts at a predetermined temperature and releases the door. Other self-closing methods are used.

Fire extinguishers and fire extinguishing systems are of paramount importance. Fire extinguishers are designated by ratings which are determined by the fire conditions that they will control. It is essential that extinguishers rated for typical lumber yard and woodworking shop hazards be used. A fire extinguisher that is suitable for one condition and used on another may be not only ineffectual but it may actually increase the intensity of the fire.

Pails, casks and hand hose equipment are all parts of the fire prevention system. Be sure that the proper equipment containing the proper fire control agent is available at strategic spots throughout the yard and plant. Check with local authorities and with Underwriters Laboratories and the National Fire Protection Association for additional fire prevention information.

Safety Equipment

Other measures that should be considered for safety include first aid equipment spotted strategically throughout the yard, goggles for men using woodworking machinery, heavy duty gloves, work shoes with safety caps, and respiratory equipment for use in sanding and other operations.

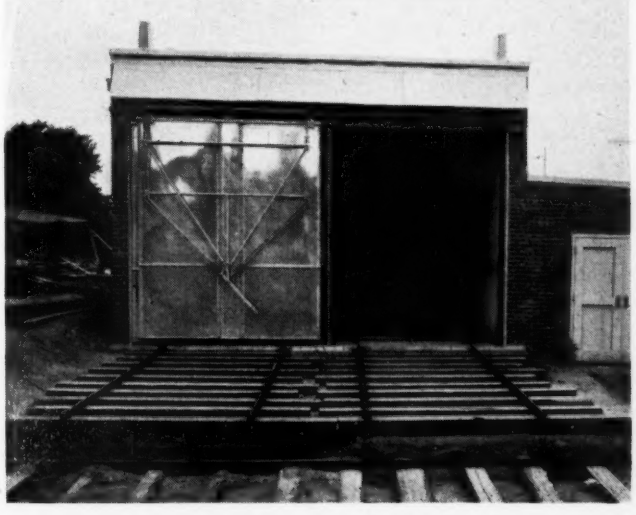
DRY KILNS

Gas and Oil Heated Kilns

Among the latest developments in dry kilns is the use of external gas or fuel oil as the source of heat for the kiln. Such a kiln fits into the plans of small and medium-sized yard owners who do not care to make too large an initial cash outlay. The heat is transferred to the kiln through metal ducts with dampers so arranged that automatic control is possible. Air circulation inside the kiln may be helped along with fans or the kiln may be designed for natural circulation.

Forced-Circulation Kilns

Many of the dry kilns which are being built today are equipped with heavy electrically driven fans to produce forced circulation. These kilns are commonly referred to as "forced circulation" kilns. Pre-conditioned



NEW design developments have brought small kilns within dealer reach.

THE use of power conveyors and loaders will effect substantial savings in handling costs for coal, sand, aggregates, and almost every other item carried by the building products dealer.

THE AUTOMOTIVE industry has engineered a style and type of truck for every transport problem. The above plate glass truck is used by a dealer in Oklahoma.

air of the desired temperature and humidity is simply blown through the piles of lumber until it is dry. The temperature, humidity, and ventilation are controlled automatically to prevent the lumber from drying too fast which would cause objectionable checking and warping.

Modern forced circulation kilns are simply large, well-insulated compartments with intake and outlet vents on top. The compartment is heated with steam coils and humidified with live steam spray. By means of a wet and dry bulb recorder-controller instrument, which is hooked up to automatically open and close the heat valves, steam spray valves, and the vents, the entire drying process can be controlled by one man from a small operating room on a 24-hour a day basis.

A modification of the "forced circulation" kiln is the external blower-type where the fans are located outside the kiln in separate compartments. The pre-heated air is blown in and out of the kiln through metal ducts.

Natural-Draft Kilns

A second type is the "natural draft" kiln, which has its heating coils so arranged that the circulation in the kiln is produced by gravity; hot air tends to rise and cool air tends to fall, which brings about circulation if the lumber is piled in the right manner. This kiln does not have fans. The heat, humidity and ventilation are controlled in one way or another, either manual, combination manual, automatic, or entirely automatic.

If the kiln runs continually with a green load being put in and a dry load taken out of the opposite end simultaneously, it is known as a "progressive" type kiln. If the entire load of lumber is removed and a new load put in, it is called a compartment type kiln.

A MODERN concrete block plant that can produce all sizes of standard blocks with a minimum of highly versatile machinery, is a profit maker in every community.

CONCRETE BLOCK PLANTS

The popularity of concrete blocks in both light and heavy construction, and the necessity for the source of supply of these products relatively close to the consuming area, has led many building products dealers throughout the country to install a concrete block manufacturing plant as a part of their overall material's supply service.

Modern, high-speed equipment is now available that produces all sizes of these blocks, efficiently and of uniform high quality. Manufacturers of this equipment will be glad to help the dealer plan and set up an adequate plant for any trading area.

STAGING HORSES AND SCAFFOLDING

There are available on the market several types of staging horses and scaffolding of steel welded construction and designed to collapse into compact form for storage. This equipment is in great demand by contractors and builders.

Many dealers have added these products to their lines not only as resale merchandise, but as rental equipment for their contractor-builder customers.

Since the horses and scaffolding are exceptionally durable, their rental will realize a high return over a period of time, and the additional service of the dealer to his customers has a high good-will value.

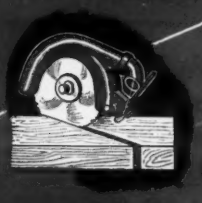
STEEL STRAPPING

Considerable research has been conducted in recent years on improving packaging, shipping and storing of all types of merchandise. Building materials have received considerable study in this regard, with the result that new efficiencies have been developed to cut handling costs and reduce spoilage of many types of construction materials.

Steel strapping is not new. It has been employed by many industries for a number of years. It is, however, comparatively new to the building products field, but its applications are being widened rapidly and steadily.

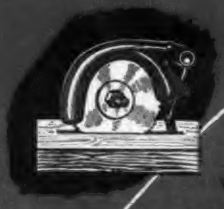
With lumber, steel strapping was first employed at the

REDUCE COSTS!



It's a MITER saw!

REPLACE OUT-MODED EQUIPMENT



It's a RIP saw!

Why clutter-up your saw-shop with *many* single-purpose machines when you can reduce costs by using an all-purpose DeWalt?

This one machine actually does the work of *many*. In less than a minute, you change the cutting tool on a DeWalt, and you have another machine!

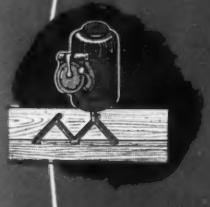
DeWalt uses little floor space. You can use the space DeWalt saves for more efficient materials handling and other cost-reducing purposes.

DeWalt is fast . . . accurate . . . easy to operate. It is safer, too, than the out-moded equipment commonly used before streamlined DeWalt replaced it.

There is a low-cost DeWalt for every cutting need — from ½ H.P. to 10 H.P. Every model is a quality tool. Write for catalog. DeWalt, Inc., 54 Fountain Avenue, Lancaster, Penna.

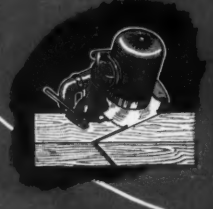
with this
ALL-PURPOSE
DEWALT

It's a DADO machine!



It's a ROUTER!

It's a SHAPER!



It's a VARIETY saw!

It's a CUT-OFF saw!

ALL THESE AND MORE IN ONE . . . and for THE PRICE OF ONE!

DEWALT

THE COMPLETE SAW-SHOP IN ONE MACHINE!

mills to package it for shipment. Now, in addition, many yards are using strapping to prevent piles from curling in the open, and to prepare items for local delivery.

The rapid trend toward mechanical handling of building products, and the palletizing of the items for the most effective use of mechanical equipment, is widening still further the use of steel strapping by the retail dealer.

***STEEL STRAPPING**, as a means of more efficient and damage-free shipment of building products, is being used not only by manufacturers in preparing their products for shipment, but by dealers who have found the method helps them with their delivery problems*

TRUCKS AND TRAILERS

Proper selection of truck and trailer equipment, based on the needs for each yard operation, is essential in order to insure the most efficient and economical transporting of materials.

In the past, most dealers confined their choice of trucks to the maximum size required, considering it was better to have all of one size rather than several sizes. This, however, has proved costly, particularly, where a dealer has a high percentage of light delivery.

The best way to select exactly the correct equipment is to let the truck manufacturer or dealer analyze the problem and make his recommendations.

***TRACTOR** trailers and specially equipped truck beds for rapid unloading are finding increasing use in the building products field.*

There are today, sizes and types to suit all purposes; and the ability of the automotive industry to produce in amazing numbers, has ended the acute shortages that existed a year ago.

In addition to increased mechanical and operating efficiency, much of which is based on military use of trucks under extremely grueling conditions, greater emphasis is given to operator comfort and safety. Wider and more comfortable cab seats, stronger, welded, all-steel cabs, larger windshields with increased visibility, more responsive control equipment, built-in ventilating systems, sharper-angle turning, and movement of front axles back to provide better weight distribution are among leading improvements to be noted in this year's models.

The new trucks reflect extensive study of actual load conditions. Manufacturers are in a position to recommend the best and most economical type to be used under typical dealer operating conditions.

While the use of trucks by building products dealers in the past has been centered in the lighter types, an increasing number of dealers are finding use of medium and large-sized truck and trailer units. These combinations prove extremely versatile. The trailer can be loaded while the power plant is used for other purposes. Line yard operators who are concerned with inter-yard movement of mass quantities of building materials and dealers specializing in selling to industrial customers are among those who are making extensive use of the truck-trailer combination.

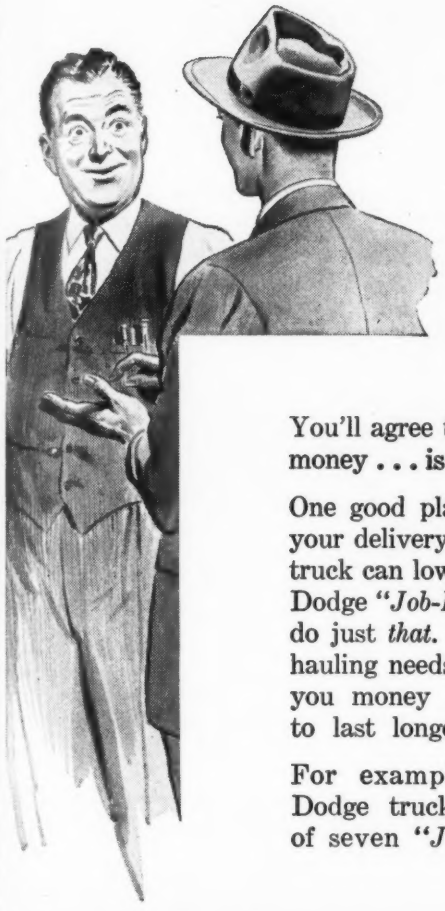
Mechanical Unloading

Mechanical unloading devices for truck beds and trailer beds are helping to speed deliveries and reduce labor costs. One of the most recently announced devices is hydraulically operated and consists of an extra roller supporting the tail end of the load. The roller is cranked by an arm pivoted under the rear end of the chassis and controlled from buttom located both on the rear of the truck and on the steering column in the cab.

CEMENT MIXING EQUIPMENT

Many dealers, in answer to a need in their trading area for mixed concrete, have added this feature of service to their business. In most cases this was no radical departure from their previous services because sand, aggregates, cement, etc. had been a part of their lines for many years.

No matter to what extent a dealer wishes to enter the concrete mixing business, there is a suitable type of equip-



LUMBER DEALERS:

Lower Delivery Costs Mean Lower Overhead

You'll agree that a good way to *make* money . . . is to *save* money.

One good place to watch costs is in your delivery operation. For the *right* truck can lower delivery costs plenty! Dodge *"Job-Rated"* trucks are built to do just *that.* They're built to *fit* your hauling needs . . . save you money . . . and to last longer.

For example, every Dodge truck has one of seven *"Job-Rated"* truck engines. It is a high-compression engine of advance design . . . which insures maximum efficiency, with "top" economy.

Each has exactly the right clutch, transmission, rear axle, and every other unit . . . *"Job-Rated"* for maximum dependability, and long life.

Let your Dodge dealer tell you the whole *"Job-Rated"* story. You'll quickly realize his story makes sense! And remember . . . *only* Dodge builds *"Job-Rated"* trucks.

For the good of your business—

Switch to "Job-Rated" DODGE TRUCKS

ment to fit his needs; not only in stationary mixers but in the mobile units as well that mix enroute and deliver the finished product at the job site.

Dealers also are buying small mixing plants which they rent to an individual or contractor on a per day basis. Thus, in addition to the materials, they are also adding a profit by supplying this rental machinery.

Many manufacturers are in this field with a full line of high quality mixers. Before deciding definitely what type and kind you feel is adequate, it is better to call in a manufacturer's representative for his expert opinions.

MECHANICAL HANDLING

Mechanical handling of building products is one of the livest subjects being discussed in dealer circles today. Equipment and methods to gear the yard to a mechanized handling operation are receiving greater attention at present than at any time in the past.

There are two main factors largely accounting for this high level of interest. (1) The rapid advances in labor costs have put obsolete manual handling methods at a premium. (2) In the past several years an entirely new industry has been developed—the mechanical handling equipment industry. Tested equipment handling ideas and improvements have poured out of engineering and design laboratories in a volume that exceeds almost any other field of mechanical engineering.

Dealers have been quick to respond. The majority of new yards being built today are laid out for mechanized material handling. Prime consideration is given to this method of lower operating costs where yards are now being remodeled. Present handling methods in use at existing yards are receiving close scrutiny by progressive dealers.

While the fork lift truck and straddle carrier symbolize mechanical handling equipment to many dealers, they actually represent only one of several broad divisions of equipment designed to aid in the handling of building products. Hand and power trucks, conveyors, cranes, hoists and unitizing equipment (steel strapping, pallets, etc.) are also available to solve handling problems.

In almost every case there is today more than one type of mechanical equipment that can be used to perform any given handling operation. The lumber and building products merchant must carefully weigh all types and select those that do the job best when considered from such standpoints as the initial investment, operating and maintenance cost and physical yard changes (if any) required to accommodate the equipment. In addition to paying for itself out of savings made by replacing the old handling method, the equipment also must be selected in light of its ease of operation and its safety to both the operator and others.

Valuable assistance can be secured from the manufacturers of mechanical handling equipment. Material handling engineers from such manufacturers will survey the dealer's yard operation to determine whether or not it can be benefited by the use of mechanical handling equipment. This service, offered without obligation by such engineers, makes it unnecessary for those who are not trained in the science of materials handling to experiment on a hit or miss basis that can often result in added expense and disappointment.

STRADDLE TRUCKS, fork lifts, hydraulic lifts, conveyors, and many other types of mechanical handling equipment are designed to help building products dealers move merchandise more efficiently and economically than ever before.

Section 25

Selling and Promotional Aids

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SELLING AND PROMOTIONAL programs are based on the successful coordination of three merchandising tools; (1) Advertising, (2) Personal Sales Effort, and (3) Effective Store Display. No one of the three can ever be completely efficient in itself; and even when the three are closely coordinated, the basic program must be logically and consistently planned.

The careful study of proved merchandising techniques is necessary at this time, for in the building products industry, the healthy condition of competitive selling has returned after a long absence. Operating expenses and overhead have not, however, subsided to anything like a pre-war level. Thus, the retail dealer is faced with the necessity of maintaining a steady, high volume of business if he is to stabilize profits. And the only way he may now do this is by doing an efficient job of selling his products.

Let us consider individually the three segments of selling, and discuss the various ways they may be organized and developed into a smoothly operating program.

ADVERTISING

Advertising is more of a prospect getter than a sales clincher, although in many instances it may be the factor that crystallizes the idea to buy in the prospect's mind.

Many dealers lose sight of the fact that advertising is a sales tool that should pay its way. The various media available, if properly used can produce tangible, definite results. Improper planning, however, or the use of an incorrect type of advertising for a specific job, may very likely fail completely.

Active Selling Advertising Media: Certain advertising media, such as newspapers, direct mail folders, radio, handbills, etc. are active media. The ads placed with them should, therefore, do an active selling job. What you want from them are prospects entering your store to buy the merchandise you have mentioned in them.

Results from active advertising are immediate, and you can gauge its success by noting the inquiries and sales of the particular items advertised during the 48 hour period following its appearance.

In order to get the maximum number of inquiries, therefore, the ads used in active media should overcome the primary objections that will enter the reader or listener's mind as he considers your message. There are two major factors of sales resistance that arise in all fields of selling: two questions a person asks himself before deciding to buy; (1) "Do I need the product or service, and (2) Can I afford it.

Retail merchants who have enjoyed outstanding advertising success almost invariably follow a set formula of advertising make-up. To overcome the first resistance, an effective picture of the product is shown, followed by carefully worded "selling" copy. Then the price is shown. In simplified definition, the formula boils down to (1) picture, (2) copy, (3) price.

In publishing prices, if the item or service costs more than the average customer is able to pay for in cash, break down the total cost into its monthly payments. Then the prospect will be able to determine whether he can fit the amount into his budget.

If you receive many inquiries in response to your advertising but fail to finalize the actual sales, then the fault is not with the advertisements, but with the coordination of other essential sales efforts with it. Advertising that brings in a satisfactory number of prospects, has done its part of the selling job. The way the merchandise is displayed in the store, and how sales personnel handle the prospect, carry the sale from that point.

Institutional Advertising: This type of advertising is devoted to selling a company, an industry, or a general service. It differs from active advertising in that it covers generalities rather than specifics about products. It does not create the buying impulse with readers or listeners that is evidenced by action.

The type of ad placed in the classified section of a telephone directory is typically institutional. So are billboard displays, truck signs, calendars, etc. All of these publicize a company's name and services, and from that standpoint perform a very important function in a well-rounded advertising program. An overbalanced program in this direction, however, will not return full benefits from the

advertising dollar, and will not actually create business as will active advertisements in active media.

Specialty Advertising: Many dealers have used advertising specialties, (imprinted pencils, carpenter's aprons, notebooks, and other novelties) with great success. There is no question but that such items are excellent goodwill builders, and good will is the best insurance of customer loyalty you can possibly win. In proper proportion with other types of advertising, specialty items play an important part in many programs; but a top heavy appropriation for specialties at the expense of active selling advertising will result in a program that lacks its maximum sales developing power.

MERCHANDISE DISPLAY

The second sales tool at the disposal of the retail dealer is display, and its importance in clinching sales cannot be overestimated. Proper display of merchandise performs a twofold purpose. First, it places the products in a position where a salesman may easily demonstrate and explain them. Second, merchandise arranged to best advantage in a store will inspire an amazing volume of spontaneous sales.

Modern display techniques are all pointed toward making the merchandise accessible to the trade, so people can get close to it, examine it carefully, see how much it costs. Neatness and simplicity are perhaps the two most significant factors in good display design; elaborateness or any other special features that tend to confuse the overall pattern of a sales area should be avoided.

Most manufacturers have developed scientific "point of sales" displays, posters, and other material that will help sell their products. It is a good policy to find out how this material is supposed to be set up and used, and then do it.

PERSONNEL TRAINING

The building products field is essentially technical, and it is necessary for the people who sell to be thoroughly familiar with product uses, applications, specifications, etc.

During the past ten years several universities have offered complete four year courses in light construction, and the graduates receiving their degrees from these schools are well qualified to serve in any phase of the industry. Many dealers are availing themselves of these young men, and training them to become members of their management group.

The 30 day short courses that have been conducted by regional associations during the past few years have proved an excellent way to give young employes a sound background in the fundamentals of our industry. These courses are designed to cover the essential phases of product data, applications, and methods, and the young men finishing this course are better equipped to serve the trade than they were before taking it.

In addition to the above, there are several other ways for a dealer to train his staff. One of the most popular methods, and one practiced by a large number of dealers, is by holding regular evening meetings once a week, or every other week, as the group desires.

At the meetings, a manufacturer's or jobber's representative is asked to demonstrate and explain some particular product, its use in construction, its service abilities, limitations, etc. In other words, each meeting is devoted to a subject that will help every employe, whether he be a salesman, estimator, or truck driver to have a clearer understanding of it.

Meetings of this kind are never considered as extra work by employes. Most are eager to learn and to equip themselves to do a better job; so if the meetings are interesting and informative, employes will look forward to them.

All manufacturers of building products have developed instructive catalogues and brochures about their products, which, in themselves, are authoritative texts on those items. Most are carefully illustrated and worded to give a clear, non-technical explanation of all points. A library of these pieces is a worthwhile sales tool for every organization.

***TRAINED** personnel are the first essential to successful merchandising. With many universities throughout the country offering degrees in light construction, and 30 day short courses available in practically every state, the dealer today has more opportunity than ever before to avail himself of specially trained men.*

The editors and publishers of AMERICAN LUMBERMAN have attempted to compile in this Dealer Products File a complete analysis of product data and information so that it will be constantly available and easily found. Through the years that it has been published, dealers have come to regard and use it as a text for employes, and as a sales tool with customers.

Most sales executives now agree that successful selling depends largely upon product knowledge, sincerity, and hard work. There are no other mysterious and rare attributes found only in scattered individuals who make good salesmen. For that reason, any employe who wants to, and who is given the opportunity to learn, can develop into a valuable salesman for an organization.

The smartest yard owners today are those who are training every employee, experienced and inexperienced, to higher standards of service instead of waiting for competition to force them into it.

The smartest outside salesmen today are those who show a genuine personal interest in all their prospects . . . the ones who leave their customers with a deep-rooted conviction that they are "service-conscious" rather than "commission-conscious."

The smartest inside salesmen are those who go out of their way to show their customers friendly, **interested** attention . . . are quick to give them courteous, **helpful** service.

The only way to meet and beat tougher-than-ever competition is to get tough with yourself . . . really tough. Ask yourself, "Am I merely a warehouseman, or am I first and always a super salesman. . . . the kind who can sell rings around car dealers, department store and home appliance salesmen?"

If you are just taking orders for items currently in stock and turning them down on items out of stock—simply selling so many cans of paint or so many square feet of wallboard—then the public will regard you as a warehouseman, nothing more.

If you are selling the end use of your product—more attractive walls or better space-planning for example—then you are doing a **creative** selling job. If you are brushing up now on **scientific** selling methods in a buyers' market—and making the most of your advertising and merchandising aids—then, and only then, can you qualify as a super salesman ready to meet competition on any ground.

Send for these: Manufacturers' catalogs, literature, sales aids, franchise data.

5 ROOFING PRODUCTS. Send for complete data and dealer prices about Abesto Liquid for cold application built-up roof construction and resurfacing, Fiberated roof coating, Semi-Plastic, Quick Setting Plastic, and Fiberated metallic roofing material. **Abesto Mfg. Corp., Michigan City, Ind.**

STEEL STRAPPING OF LUMBER. Booklet "Lumber 'Bound to Get There' from Mill to Job" illustrates and describes strapping methods and advantages. Available from **Acme Steel Co., 2838 Archer Ave., Chicago 8, Ill.**

PLYWOOD FOOTAGE CALCULATOR. Simplifies footage and price calculation. Also ask for leaflet describing the "Easi-Sell" plywood merchandiser-cabinet for displaying 60 assorted pieces of hardwood plywood. Write **Aetna Plywood & Veneer Co., 1732 Elston Ave., Chicago 22, Ill.**

STEEL DOOR FRAMES. 1-piece all-welded steel construction. For architectural details, illustrations, sizes, write **Aetna Steel Products Corp., 61 Broadway, New York 6, N. Y.**

WINDOW STAYS for holding double-hung sash in place. Snug-fitting. For descriptive and sales information, write **Air-Tite Window Stay Co., Chicopee, Mass.**

METAL LATH, ACCESSORIES. For catalog data on metal lath, steel studs, corner beads, picture mold, wall ties, etc., write **Alabama Metal Lath Company, Box 992, Birmingham, Ala.**

CUT NAILS—in lengths from 2d to 100d. For literature and price list write **Alan Wood Steel Co., Conshohocken, Pa.**

ALUMINUM CASEMENTS, picture windows with insulated glass, basement and utility windows. For descriptive literature containing information about construction features, sizes, dealer sales information, address **Alcasco Products, Inc., 1144 Ninth St., Muskegon Heights, Mich.**

YARD TRANSPORTATION. Learn how you can reduce yard handling costs with the Allis-Chalmers IB tractor. Write **Allis-Chalmers (tractor division), Milwaukee, Wisc.**

ALUMINUM ROOFING INSTRUCTIONS. Detailed application instructions may be obtained in folder or wall chart form. Write, specifying number of extra folders or charts needed, to **Aluminum Company of America, 1723 Gulf Building, Pittsburgh 19, Pa.**

ALUMINUM WINDOWS—double-hung, mullion, picture, basement windows—storm sash and screen. For the ALWINTITE catalog address **Dept. AL, The Aluminum Window Corp., 801 Stewart Ave., Garden City, N. Y.**

SEAL OF QUALITY for aluminum windows. For information and names of manufacturers address **Dept. L, Aluminum Window Mfrs. Assn., 209 Cedar Ave., Takoma Park, Washington 12, D. C.**

CABINET HARDWARE CATALOG showing the "Amerock" line of polished chromium, colonial black, brass, bronze, for residential and commercial use is available by addressing **Dept. 1-AP, American Cabinet Corp., Rockford, Ill.**

AMERICAN KITCHENS. For catalog data on "American Styled-in-steel" wall, utility, and base cabinets, write **American Central Division, AVCO Manufacturing Corp., Connersville, Ind.**

FARM FENCE BOOKLET entitled "It's Your Top Soil," will help you promote soil conservation among your farm trade and enable you to increase your sales of fence and other farm products. Write **American Fence, 410 Rockefeller Building, Cleveland 13, Ohio.**

FLOOR SURFACING MACHINE DATA. Send for free 12-page profit-plan booklet on floor sanders. Also literature on edgers, saws, small sanders and maintenance machines. **The American Floor Surfacing Machine Co., 521 S. St. Clair St., Toledo 3, Ohio.**

WOOD TREATING BOOKLET. Gives information about Wolmanized lumber and selling protection against decay and termites. Offered by **American Lumber & Treating Co., 332 S. Michigan Ave., Chicago 4, Ill.**

FLUSH DOORS, hollow core type—aircraft, marine, technical plywoods. For information write **American Plywood Corp., New London, Wisc.**

GUM TURPENTINE. Dealers are invited to identify their stores with the national consumer advertising featuring AT-FA gum turpentine. For information address **American Turpentine Farmers Association, Valdosta, Ga.**

PAINT COLOR CARD, together with coverage and other information on paints, stains, lacquers, synthetic enamels is offered by **The American Varnish Co., 1136 N. North Branch St., Chicago 22, Ill.**

ANDERSEN "WINDOWALLS"—Gliding window units, pressure seal window units, casement units, basement-utility units. For literature, write **Andersen Corp., Bayfort, Minn.**

LINSEED OIL. New counter display featuring "Pol-mer-ik" for placing near your cash register is offered by **Archer-Daniels Midland Co., 689 Roanoke Bldg., Minneapolis, Minn.**

GLAZING COMPOUND point-of-sale display. For glazing wood or metal sash. For sample and sales information write **Armstrong Co., 4063 S. LaSalle St., Chicago 9, Ill.**

LITERATURE, SAMPLES ON ARMSTRONG LINE. Manufacturer offers samples plus complete literature and booklets for consumers on Armstrong's Temlok sheathing, lath, interior finish, insulation board, "Monowall," insulating wool and hardboards. **Armstrong Cork Company, 4704 Ross St., Lancaster, Pa.**

SASH SNUBBERS for holding double-hung wood or aluminum windows. For trade discounts and details, write **Arrow Mfg. Co., P.O. Box 468, Independence, Kans.**

MUSTANG ASBESTOS SIDING. Descriptive folder and price list are offered on the asbestos siding produced at this new plant. Write **The Asbestos Co. of Texas, P.O. Box 1082, Houston 1, Texas.**

METAL TRIMS DISPLAY. Self-Service display rack from which customers can quickly select their "Chromedge" metal trim patterns. Ask also for the "Chromedge" catalog of patterns available. Address **The B & T Metals Co., Columbus 16, Ohio.**

GIANT WEIGHT MULTI-SHINGLES. Barrett invites you to send for full information on assortment of colors and blends, extra thickness, etc. **The Barrett Div., Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y.**

LABOR SAVING LUMBER BUGGY. Learn how "wheeling it" saves time, work; write **Bassett Industries, Vinton, Iowa.**

STEEL BRIDGING for wood joists. Sizes for use with 2x8, 2x10, 2x12 joists. Write **Beloit Steel Industries, Inc., 307 City Hall Bldg., Rockford, Ill.**

FIREPLACE SUPPLIES. Catalog and full information on this line being currently offered includes fireplace units, ash dump, cleanout door, grates and log dogs, steel and cast dampers and fireplace curtains. **Bennett Ireland, Inc., 449 Pine St., Norwich, N. Y.**

LOCK "PREVIEW"—covering the "Best Universal" interchangeable core locks, tubular mortise night latches, knob latches, sliding gate locks, rim night latches and cylinders, cabinet, desk drawer, locker and switch box locks and padlocks. Write **Best Universal Lock Co. Inc., 10 N. Senate Ave., Indianapolis 4, Ind.**

ELECTRICAL LIVING BOOKS. For copies of "How to Make Your House the Hit of the Home Show," and "Planning Book for Electrical Living Homes," write **Better Homes Bureau, Westinghouse Electric Corp., P.O. Box 868, Pittsburgh 30, Pa.**

GLAZING COMPOUND. For facts about "Perma Glaze" brand write **The Biddle Co., 612 S. Main St., St. Louis 2, Mo.**

DATA FOR BUYERS—"Biddle" Bulletin, "Biddle" Price Digest and "Biddle" Survey contain advice for buyers, shipping weights, freight rates and grade differentials. Write **Biddle Purchasing Co., 280 Broadway, New York 8, N. Y.**

BIRD "CHAIN OF SALES COMMAND." Dealers are asked to write for information on Master-Bilt shingle, Giant individual and Tri-Tab Hex shingles, 19" Paroid and Proslate roll roofing, insulated sidings, cements and coatings. **Bird & Son, Inc., Dept. CD, East Walpole, Mass.**

COLOR RECIPES. Dealers are invited to acquaint themselves with the Kyanize color recipes featured in National magazine advertising. Write **Boston Varnish Co., Everett Station, Boston 49, Mass.**

METAL BUILDING PRODUCTS. For information about the Bostwick line of metal lath, corner bead, wall plug, cold rolled steel channels, etc., write **The Bostwick Steel Lath Co., 100 Heaton St., Niles, Ohio.**

"PLASTIC WOOD" for sale to hobbyists, home-owners, professional craftsmen. Available in tubes, quarter pound and pound cans. Write **Boyle-Midway, Inc., New York, Atlanta, Chicago, Los Angeles.**

ADJUSTABLE POST INFORMATION on the Tel-O-Post all-steel adjustable post jack, Brainard steel fixed-length posts; also "Brite-Lite" area walls. Address **Dept. 349, Bldg. Prod. Div., Brainard Steel Co., Warren, Ohio.**

FLOORING, FLOOR CARE. Data available on Bruce strip flooring, hardwood flooring in modern block design, and random-width planks. Also data on complete line of floor care products, including Bruce floor finish, Tuf-Lustre wax, self-polishing wax, Doozit cleaner-waxer, linoleum seal and asphalt tile cleaner. **E. L. Bruce Co., Memphis, Tenn.**

SCALE MODEL HOMES, apartment houses, office and other buildings. For details consult **Build-A-Plan, Inc., 1150 Broadway, New York 1, N. Y.**

BUYERS' DIRECTORY—for sources of supply on building products and equipment of all kinds, turn to the Directory pages beginning on page 513.

CALDER GARAGE DOORS. For complete information about Calder "Wedge-Tight" wood-sectional and aluminum-sectional garage doors, write **The Calder Manufacturing Co., Lancaster 4, Pa.**

SASH BALANCE CATALOG describing and illustrating Caldwell side jamb and overhead styles. Write **Caldwell Mfg. Co., 66 Industrial St., Rochester, N. Y.**

TAPER SEAL GARAGE DOOR. For information about construction features, sizes and dealership, write **Capitol Products, 311 East Adams St., Springfield, Ill.**

CERAMIC SURFACED SIDING. "Ceramo" surfaced asbestos siding information will be sent you on request. Write **The Philip Carey Mfg. Company, Dept. A1-4, Cincinnati 15, Ohio.**

JIFFY LINE—screen painter and duster, roller applicator, screen patch. Write **A. B. Carlson & Co., Aurora 9, Ill.**

"BILT-WELL" MILLWORK. Ask for information about the new "Bilt-Well" line of millwork products—Superior unit windows, Carr-dor garage doors, corner cabinets, entrances, breakfast nooks, etc. Address **Carr, Adams & Collier Co., Dubuque, Ia.**

METAL BUILDING MATERIALS. Metal residence, casement, basement, utility and security windows—metal frame

and screen storm panels—metal lath and accessories. For catalog information address **Ceco Steel Products Corp., 5601 W. 26th St., Chicago 50, Ill.**

CHALK LINE REEL. Easily reloaded. Adjustable tension. Also razor blade scraper, flame thrower, gas torch for sweating copper tubing, plumbers' furnace. Ask your jobber or write for circular, **Cedarberg Mfg. Co., 545 S. Fourth St., Minneapolis 15, Minn.**

CELOTEX INSULATION and board products. Write for literature on Celo-Siding, insulating sidings, insulating sheathing, insulating lath, building board, Cemesto, interior finishes, rock wool batts, hand pouring insulation and roof insulation. **The Celotex Corporation, Chicago 3, Ill.**

PLASTERING PRODUCTS. For literature and information about Celotex insulating lath, Celo-Rok anchor lath, and plasters, write **Celotex Corporation, Chicago 3, Ill.**

ROOFING AND SIDING. Celotex offers you complete data on Celotex asphalt shingles and roll roofing and siding. **The Celotex Corporation, Chicago 3, Ill.**

ADVANCE-DESIGN TRUCKS: To learn about "3-Way Thrift" in truck operation, write **Chevrolet Motor Division, General Motors Corp., Detroit 2, Mich.**

SASH PULLEYS—grey iron housings and wheels with turned grooves. Variety of finishes and bearings. Write **Cleveland Lock Works, Div. of The Consolidated Iron-Steel Mfg. Co., 1292 E. 53rd St., Cleveland 14, Ohio.**

STAINED CEDAR SHINGLES. Processed shakes, handsplits and stains. For particulars on how this line can be added and description of dealer helps and promotion aids, write **Colonial Cedar Co., 600 W. Nickerson St., Seattle 99, Wash.**

MAPLE AND BIRCH FLOORING. Complete booklet of grading rules and "75th Anniversary" data is offered by the manufacturer of Laytite Maple and Birch Flooring. **The Connor Lumber and Land Co., Marshfield, Wisc.**

SCREEN DOORS, window screens and combination screen and storm doors. For literature write **Continental Screen Co., Book Bldg., Detroit 26, Mich.**

CONTINENTAL FENCE. Ask for information about the construction and sales features of this fence with the "Pioneer" knot—dealer helps, etc. Write **Dept. AL, Continental Steel Corp., Kokomo, Ind.**

ATTIC STAIRWAYS. For construction features, architectural details and dealer information write **Craig Wood Products Co., 1029 Talbotton Rd., Columbus, Ga.**

RED CEDAR PROCESSED SHAKES. Creo-Dipt requests you write for complete information on their plan of selling Zephyr Red Cedar Processed Shakes through distributors and dealers exclusively. **Creo-Dipt Co., Inc., North Tonawanda, N. Y.**

ELECTRI-FEED SAWMILL: For information on the performance of this mill send for illustrated literature. Address **Cunningham Machinery Corp., 735 Ricon St., Shreveport, La.**

"SCREWTITE" NAILS of aluminum for use by roofers, farmers, builders. Neoprene washers. For samples write **Cupples Co., St. Louis 2, Mo.**

INTRODUCTORY DEALER OFFER on "Cuprinol" surface-applied wood preservative. For details, address **Cuprinol Div., Darworth, Inc., 53 Maple St., Simsbury, Conn.**

BILLION DOLLAR FARM MARKET. Country Gentleman offers you help in selling it. For information write **Curtis Publishing Company, Philadelphia, Pa.**

GLASS WALL TILE. For dealership information about new Crys-Glas wall tile, write, wire or phone **Dearborn Glass Co., Dept. RB, 2402 W. 21st St., Chicago 8, Ill.**

CATALOG AND SAMPLES. Standard 1-piece storm sash and screen can be easily converted into modern 3-section combination storm and screen unit by applying patented Oswald pivotal tongue and groove joints. Write **W. J. Dennis & Co., 4444 Irving Park Rd., Chicago 41, Ill.**

FENESTRA CATALOG—covering residence steel casements for dining room, bedroom, kitchen, living room. Send also for inside metal storm window folder, stock products catalog, intermediate and industrial window catalogs. Address **Detroit Steel Products Co., Dept. AL4, 2269 E. Grand Blvd., Detroit 11, Mich.**

PAINT BRUSH SELF-VENDOR, carrying 12 brushes for counter display is offered with Devoe nylon brushes. Write **Dept. A-6, Devoe & Raynolds Co., Inc., Brush Div., Princeton, Ind.**

ONE-COAT HOUSE PAINT. For coverage data and sales information, write **Dept. A-5, Devoe & Raynolds Co., Inc., 787 First Ave., New York 17, N. Y.**

ONE MACHINE SAW-SHOP. Catalog tells you how DeWalt rips, cross-cuts, angle cuts, dadoes, routs, shapes, etc. For your copy, address **DeWalt, Inc., 54 Fountain Ave., Lancaster, Pa.**

END-MATCHED PINE FLOORING. For information on the profit-building opportunities of Dierks end-matched pine flooring, plus dealer prices, write **Dierks Lumber and Coal Co., 1006 Grand Ave., Kansas City 6, Mo.**

WINDOW UNIT—of kiln-dried Ponderosa pine. Preservative treated. For construction details and sales information, address **The Dixon Industries, Spokane, Wash.**

"JOB-RATED" TRUCKS: For information about the Dodge line of trucks see your local dealer or write **Dodge Trucks, 7900 Joseph Campau Ave., Detroit 11, Mich.**

SUCCESSFUL FIREPLACES. New Donley catalog contains suggestions for planning a successful fireplace, illustrates and describes Donley fireplace dampers, fireplace equipment, the Donley Heat-Saver fireplace unit, outdoor fireplaces, basement and utility windows, incinerators for homes, apartments and hospitals, coal chutes, access doors, garbage receivers, package receivers, mail receivers, laundry chutes, septic tanks, steel louver attic ventilators, roof ventilators, brick ventilators, foundation ventilators, joist hangers, steel basement columns, clothes posts, concrete inserts, ties and anchors, steel mortar boxes and tubs, brick clamps, roof coating, caulking compounds and guns, etc. Write **The Donley Bros. Co., 13928 Miles Ave., Cleveland 5, Ohio.**

FIR PLYWOOD DATA. Literature illustrating and describing exterior and interior type Douglas Fir Plywood grades, uses, standards, etc. Send to **Douglas Fir Plywood Assn., Tacoma 2, Wash.**

WATER PUTTY—for making repairs in wood, tile or plaster. Comes in powder form, mixes with water. For sales information address **Donald Durham Co., Des Moines 4, Ia.**

DOOR CLOSERS, padlocks, night latches, dead locks, cabinet locks, screws, nuts, bolts. For catalog sheets write **The Eagle Lock Co., Terryville, Conn.**

ES-NAILS—self-locking for attaching wood or asbestos shingles directly to gypsum or insulation sheathing. For information, point-of-sale material, prices, discounts, write **Elastic Stop Nut Corp. of America, 2330 Vauxhall Rd., Union, N. J.**

LIGHTNING PROTECTION FRANCHISES. Manufacturer will be pleased to send you details on how you can sell lighting protection. Protected territories. Write **Electra Protection Co., Inc., 11 N. Pearl St., Albany 7, N. Y.**

PAINT FACTS. For details about Elliott's 6 star products, samples and prices, write **Elliott Paint & Varnish Co., 4525 5th Ave., Chicago 24, Ill.**

INSURANCE FOR LUMBERMEN—fire, windstorm and allied insurance, coupled with fire prevention engineering. Write **U. S. Epperson Underwriting Co., R. A. Long Bldg., Kansas City 6, Mo.**

OAK FLOORING. DelFair invites your request for information and prices on strip, plank and parquetry flooring. **D. L. Fair Lumber Co., Louisville, Miss.**

PLYWOOD "PRICE-O-GRAM"—biweekly information service for buyers—stocks on hand, prices, special purchases, helpful information. Write **Fiddes-Moore & Co., 205 W. Wacker Dr., Chicago 6, Ill.**

FIR DOOR CATALOG—32 pages in color showing interior doors, entrance doors, garage doors and specialties. For information and price write **The Fir Door Institute, 1205 Rust Bldg., Tacoma 2, Wash.**

"VELON" PLASTIC SCREENING. Merchandising aids, consumer folders, window streamers, car cards, newspaper mats and samples are available from wholesalers or by addressing **Firestone Industrial Products Div., Pottstown, Pa.**

GLASS CUTTER CATALOG. 4 standard types of wheels plus special types for special cutting. Address **The Fletcher-Terry Co., South St., Forestville, Conn.**

WOOD SCRAPERS—available in assortments with point-of-sale counter display. Write **The Fletcher-Terry Co., South St., Forestville, Conn.**

"FLOR-CEAL," for wood, concrete, linoleum. For information about local newspaper advertising carrying the dealer's name, write **Flor-Ceal Div., Builders Products, 500 N. Dearborn St., Chicago 10, Ill.**

LUPTON WINDOW CATALOGS—cover residential steel and aluminum casements, basement and utility windows, projected windows for schools, offices, etc., security windows for stores and warehouses, commercial projected and pivoted windows for garages, shops, industrial buildings. For catalogs, mats for advertising, etc. write **Michael Flynn Mfg. Co., 704 E. Godfrey Ave., Philadelphia 24, Pa.**

ROYAL OAK FLOORING. Manufacturer will send complete dealer information and prices on request. **Fordyce Lumber Co., Fordyce, Ark.**

GLUES—Bondwood powdered casein glue, Franklin liquid Hide glue. For samples and information write **The Franklin Glue Co., Columbus 15, Ohio.**

GARAGE DOOR HARDWARE. For illustrated catalog on "Over-The-Top" Garage Door Equipment and complete wood and aluminum garage door units, write **Frantz Mfg. Co., Sterling, Ill.**

SAWMILLS AND EQUIPMENT: Write for your copy of catalog 75 giving complete information. **Frick Company, Waynesboro, Pa.**

BUILDING SPECIALTIES CATALOG. Shows the Gabriel line of package receivers, dome dampers, ash dumps, ash pit doors, joist hangers, laundry chutes, scaffold brackets, steel basement windows, coal chutes and the Air-O-Heater fireplace unit. Write **Gabriel Steel Co., 13700 Sherwood, Detroit 12, Mich. or Harris, Inc., 145 N. High St., Columbus 15, Ohio.**

AWNING WINDOWS of wood, awning window hardware. For stock sizes and specifications, write **Gate City Sash & Door Co., Dept. L, Fort Lauderdale, Fla.**

PREFABRICATED HOMES. Send for descriptive literature about Home-Way Houses and details of dealer merchandising and selling program. **GBH-WAY Homes, Inc., Dept. AD, Walnut, Ill.**

LIFT-TRUCKS: For details on the construction features of Gerlinger lift-trucks, write **Gerlinger Carrier Co., Dallas, Ore.**

CASEMENT OPERATOR CATALOG covering Getty underscreen operators for casement windows, fasteners for both wood and metal casements, butt hinges and other accessory hardware for casement windows. **Ask for catalog E, H. S. Getty & Co. Inc., 3348 N. 10th St., Philadelphia 40, Pa.**

CELLULITE INSULATION. Manufacturer offers dealers complete data on Cellulite cotton insulation and acoustical blankets for sound deadening. Write **The Gilman Brothers Co., Gilman 6, Conn.**

SASH BALANCE CATALOG, giving complete details about "Invizible" sash balances is offered by **Grand Rapids Hardware Co., Grand Rapids 2, Mich.**

PACKAGED MILLWORK—colonial entrances, door and window blinds, wood louvers, sectional kitchen cabinets,

panel-type cupboard doors, corner cabinets. For catalogs and prices address **Gregg & Son, Inc., Nashua, N. H.**

BATHROOM CABINETS. For information about the "Stor-in-door" line of recessed and surface cabinets, write **Grote Mfg. Co., Inc., Grote Square, Bellevue, Ky.**

INSECT WIRE SCREENING. Sample books, prices and complete information on Star brand is offered by **Hanover Wire Cloth Div., Continental Copper & Steel Industries, Inc., Hanover 4, Pa.**

HARDWOOD FLOORING—for sources of supply for all types of hardwood flooring, consult the Buyers' Guide beginning on page 595.

HEATILATOR FIREPLACE. Manufacturer invites dealers to write for full dealer information on this "easy to sell" specialty. **Heatilator, Inc., 313 E. Brighton Ave., Syracuse, N. Y.**

STORE PLANNING. For help in planning your store layout ask for catalog No. 40A and send sketch of your store to **W. C. Heller & Co., 1050 Bryant St., Montpelier, Ohio.**

SASH BALANCE FOLDER. Illustrates and describes the "Hidalift" concealed sash balance. For literature, price and name of nearest distributor, write **Hidalift Div., The Turner & Seymour Mfg. Co., Torrington, Conn.**

"FLOOR PLAN" FOR PROFITS. Send for folder, "Higgins Bonded Hardwood Floors" containing full information about construction and sales points. Address **Higgins, Inc., New Orleans, La.**

HOLT FLOORING. Strip, block and herringbone in maple, birch, beech and red oak flooring. For information and dealer prices, write **Holt Hardwood Co., Oconto, Wisc.**

PRE-CUT HOUSES. For information about the "Budget House," a conventionally built, pre-cut house that offers a complete home package at low cost, write to **Hoosier Homes, Inc., 633 E. 38th St., Indianapolis, Ind.**

HAMMER STAPLER, designed to take the work out of the tacking job. For industrial and home use. Get details from **The E. H. Hotchkiss Co., Norwalk, Conn.**

LAWN MOWER AND CLEANER. Send for complete information about this combination power lawn mower and pneumatic cleaner which mows and cleans lawns in one operation. Write **Houston Blow Pipe & Sheet Metal Works, Houston 1, Texas.**

DADO HEADS, SAWS. For information on Huther Bros. dado heads and line of saws, write **Huther Bros. Saw Co., Inc., 1290 University Ave., Rochester, N. Y.**

MODULAR STANDARD WINDOWS, in wood "Red-e-fit," preservative treated, electrically branded. Write **Dept. AL, Huttig Mfg. Co., Muscatine, Ia.**

BUILDING HARDWARE SPECIALTIES—one-bore latch, storm sash adjuster, barn door latch, snap-on sash lift, hinges and butts. For literature write **Ideal Brass Works Inc., 250 E. 5th St., St. Paul 1, Minn.**

"VANITY" BATHROOM CABINET. For descriptive literature on the "Vanity" and 15 other bathroom cabinet models, write **Ideal Cabinet Corp., 7730 Joy Road, Detroit 4, Mich.**

JOIST HANGERS. Lay flat against joist and girder. Also adapted for stair well, chimney and similar framing. Information available from **The Ideal Hanger Co., 1290 E. 53rd St., Cleveland 14, Ohio.**

GRAIN BIN & PORTABLE CORN CRIB. Dealer catalog data and prices now available on the Denning Grain Bin for storage of all kinds of small grain . . . and on the Denning Portable Corn Crib; also ornamental picket fence. Write **Illinois Wire & Mfg. Co., P.O. Box 1396, Joliet, Ill.**

WEEKLY PLYWOOD BULLETIN—designed to keep you posted on plywood stocks available, prices, etc. Ask **Indianapolis Plywood Corp., 1300 Beecher St., Indianapolis 7, Ind.**

DIXIE BRAND FLOORING. Data is available on not only Dixie Brand oak flooring, but also on their stair treads, risers, thresholds, hand rails and door sills. **Industrial Lumber Co., P.O. Box 182, Little Rock, Ark.**

MILCOR METAL PRODUCTS: For information about the Milcor line of metal lath, corner lath, cold-rolled channels, corner beads, casings, special moulds, access doors, clean out doors, louver ventilators, etc., contact **Inland Steel Products Co., Milwaukee, Wisc.**

INSL-COTTON INFORMATION. Specifications and full information are offered dealers who write the manufacturer of this cotton insulation. Address **Insl-Cotton Division, Taylor Bedding Mfg. Co., Taylor, Texas.**

NEW INSULITE FOLDER, "Insulite's Wall of Protection Controls Moisture Condensation," includes information on Insulite (Bildrite) sheathing, sealed lock-joint lath and interior finishes. Write **Insulite Division, Minnesota & Ontario Paper Co., Dept. AL-49, Baker Arcade Bldg., Minneapolis 2, Minn.**

LO-"K" INSULATION. Dealers are urged to get "all the facts" about this insulation from distributors or the manufacturer. Line includes standard open blanket, enclosed blanket, open and closed aluminum foil blanket. Write **Insulation Div., Lockport Cotton Batting Co., Lockport, N. Y.**

SOLID CORE FLUSH DOORS—may be cut any length or width. Available in range of select veneer. For folder describing features and specifications write **Ipik Plywood Co., Kenner, La.**

ASBESTOS FLEXBOARD. Johns-Manville offers data on asbestos-cement board, including plain and scored sheet sizes, finish, color, packaging and weight. **Johns-Manville, Box 290, New York 16, N. Y.**

ASBESTOS ROOF SHINGLES. For data, including size, finish, colors, application, packaging, weight and where to use, contact **Johns-Manville, Box 290, New York 16, N. Y.**

INSULATING SHEATHING—for exterior frame walls of all types. For data on "Weathertite" brand, address **Johns-Manville, Box 290, New York 16, N. Y.**

SUPER-FELT BATTS. For specifications, size, packaging, net area and where to use, address **Johns-Manville, Box 290, New York 16, N. Y.**

ASBESTOS-CEMENT ROOFING SHINGLES. Full data on the "Century" No. 5 Roofing Shingles, for application on new and low-cost housing . . . and for re-roofing jobs, write **Kensbey & Mattison Company, Ambler, Pa.**

DOOR DISPLAY STAND for use on dealers' sales floors. Holds 8 doors in upright position for customers' selection. For leaflet write **Ken-Ro-Bil Corp., Van Buren, Ohio.**

METAL BUILDING PRODUCTS. Catalog sheets showing Kewanee aluminum and steel basement windows, steel commercial and utility windows, coal chutes, fireplace dampers, cleanout doors, ash dumps; also steel mortar boxes and steel truck bodies and hoists. Address **Kewanee Mfg. Co., 449 Burlington Ave., Kewanee, Ill.**

RED BRAND FENCE. Catalog data for dealers available on request on the complete line of Red Brand fence, steel posts, barbed wire, Keystone poultry fence, netting and non-climbable fence. Write **Keystone Steel & Wire Company, Peoria 7, Ill.**

FRAMELESS TENSION SCREENS, wire reinforced plastic coated cloth, metal insect screening. For information about the Keystone line write **Keystone Wire Cloth Co., Hanover, Pa.**

KIMSUL INSULATION. Manufacturer invites requests for complete details, including sales and promotion information. Address distributor in your area, or write **Kimberly-Clark Corp., Neenah, Wisc.**

ROOFER'S MOP. Literature and prices on a Roofer's Mop which the manufacturer states sells faster, may be secured from **Kirby Industries, 1408 W. Las Tunas, San Gabriel, Calif.**

PIPE JOINT COMPOUND, soldering flux, pipe mending cement. For literature and samples address **Lake Chemical Co., 162-P N. Clinton St., Chicago 6, Ill.**

ROOF LOUVER. New illustrated catalog describes the complete Leslie Louvers line: including the new SR-20, with the 4½ inch profile. Write **Leslie Welding Co., 2940 W. Carroll Ave., Chicago, Ill.**

GLASS DATA on window glass, double-glazing for picture windows, residential steel and wood sash, polished plate glass and structural glass. Write **Libbey-Owens-Ford Glass Co., Toledo, Ohio.**

CONCRETE BLOCKS. For information about the Lith-I-Bar block-making machine write **Lith-I-Bar Co., Dept. L-4, Holland, Mich.**

LOCK SETS—tubular inside set for bathroom or bedroom, inside set with bit key, cylinder front door set, combination set, screen door set, including sash fasteners, door stops, door closers, screen door closers, sash lifts, door latches. For catalog sheets write **Lockwood Hardware Mfg. Co., Fitchburg, Mass.**

PAINT SALES HELPS. Colorful, action-provoking displays and literature —offered to dealers with agency details by **The Lowe Bros. Co., Dayton 2, Ohio.**

SCREEN, STORM SASH FASTENERS —spring-tension designed to eliminate rattling and drafts. Contact your jobber or write **Ludwig Mfg. Co. Inc., 2401 Durand Rd., Racine, Wisc.**

LUMBER BUYERS' GUIDE — For sources of supply for lumber products of all kinds, turn to the Lumber Buyers' Directory beginning on page 575.

LUMBER INSURANCE. For assistance on your insurance problems, contact **Lumbermens Mutual Casualty Company, Mutual Insurance Bldg., Chicago 40, Ill.**

LUMITE PLASTIC SCREENING. For complete information, samples and dealer aids, write **Lumite Div., Chicopee Mfg. Co. of Georgia, 47 Worth St., New York 13, N. Y.**

ADJUSTABLE SCREEN DOOR GRILLES that fit any door. Packed 12 to a carton. Write **Macklanburg-Duncan Co., Oklahoma City 1, Okla.**

CALKING GUNS, COMPOUND — also glazing compound. For information about special features, prices, discounts, write **Macklanburg - Duncan Co., Oklahoma City 1, Okla.**

BUILDING PRODUCTS CATALOG—describing the Majestic line of underground garbage receivers, fireplace dampers, home incinerators, outdoor fireplaces, coal and service chutes, circular fireplaces, etc. Write **The Majestic Co., 103 Erie St., Huntington, Ind.**

MALTA WINDOW FRAMES for every type construction—casement units, picture window units, casement side windows, double-hung side windows, kitchen window units. For circulars write **The Malta Mfg. Co., Malta, Ohio.**

MAPLE FLOORING. Beech and Birch Floorings. For information about grades, thicknesses, face widths and list of member manufacturers, write **Maple Flooring Manufacturers Association, Room 385, 46 Washington Blvd., Oshkosh, Wisc.**

"MIRACLE" WINDOW UNIT. Top and bottom sash are removable from inside. Patented tension counterbalances on each sash afford finger touch control. Complete weather stripping built into each unit. Manufacturing rights available. For information address **Marquart Millwork Co., Oshkosh, Wisc.**

PRE-FINISHED HARDBOARD. Complete data available on Marlite plastic-finished paneling. Explains how easily installed, uses for new construction or modernization, ease of cleaning, etc. **Marsh Wall Products, Inc., 441 Main St., Dover, Ohio.**

MASONITE LEATHERWOOD SAMPLE. Literature and samples of Masonite Leatherwood are available. Illustrates "three-dimensional" surface treatment and the appearance of finely worked Spanish grain leather, while maintaining the advantages of Masonite brand hardboards. **Masonite Corporation, Dept. AL-4, 111 W. Washington St., Chicago 2, Ill.**

SCAFFOLDING that meets all requirements. For "Staging Horse" bulletin and latest price list write **Marvel Equipment Co., Inc., 1183 N. Main St., Oshkosh, Wisc.**

SLIDING DOOR HARDWARE—track, latches, door guide, lock and pulls. For complete catalog write **J. G. McKenna, Inc., Elkhart, Ind.**

FORGED IRON HARDWARE—hinges, cabinet hardware, garage hardware—authentic reproductions in 8 attractive period patterns. For catalog sheets address **McKinney Mfg. Co., Pittsburgh, Pa.**

JOB-FITTED CEMENTS: For booklet containing suggestions for increasing cement sales, profits, write **Medusa Portland Cement Co., 1046-1 Midland Bldg., Cleveland 15, Ohio.**

STEEL WINDOW CATALOG — covering Mesker steel residential casements, basement, projected, pivoted, security and utility windows; also steel doors. Write to **Mesker Bros., 4344 Geraldine, St. Louis, Mo.**

ORNAMENTAL IRON RAILINGS. Catalog sheets illustrate designs with sizes and list prices. Address **Metal Crafters Div., Cartone Products Co., E. Ave. and 18th St., N.E., Cedar Rapids, Ia.**

HARDWOOD FLOORING. Maker of Cahaba Brand Hardwood Flooring invites you to write for complete data on oak, beech, pecan and ash flooring. **Miller & Company, Inc., Selma, Ala. or Jackson, Tenn.**

BEAUTYCRAFT CUSTOM KITCHENS. Write for information about Beautycraft kitchens, how to obtain a franchise and available sales helps. **Miller Metal Products, Inc., 2226 Russell St., Baltimore 30, Md.**

MILLWORK LISTS covering window units, combination doors, panel doors, etc. Write **The Millwork Distributors Co., 2 N. Kresson St., Baltimore 24, Md.**

SAW REPAIR SERVICE. For information about putting your saws in shape, write **J. H. Miner Saw Mfg. Co., Meridian, Miss.**

DISAPPEARING LADDER for homes, garages, attics. Fits nearly any scuttle hole size. Folds up and out of way. For prices, discounts, dealer information address **Minnesota Wood Specialties, Inc., Box 216, St. Paul Park, Minn.**

SECTIONAL OVERHEAD DOOR. Maker of a new overhead door which will be sold exclusively through wholesalers of building materials and woodwork jobbers invites your inquiry for complete details. Fifteen standard stock sizes ready for shipment. Write **The Monarch Door, Folsom, Pa.**

SAWMILL CATALOG: Write for Montgomery-Ward's bigger than ever sawmill equipment book. Address: **Montgomery-Ward, Dept. AL-49, Chicago, Ill.**

KILN DRYING FACTS. Bulletin "Moore Facts" contains valuable information for all interested in proper kiln drying of lumber. Write **Moore Dry Kiln Co., Jacksonville, Fla. or North Portland, Ore.**

PROTECT YOUR RECORDS from fire. Send for booklet containing full information about the fire safety of Mosler Insulated Record Containers. Address: **The Mosler Safe Co., Dept. 64, 320 Fifth Ave., New York 1, N. Y.**

MUTUAL INSURANCE: For information about the fire prevention engineering and protection facilities of "The Lumber Mutuals" address the office nearest you, as shown on page 462 of this issue.

VITRIFIED CLAY PIPE: For information on selling clay pipe products write **National Clay Pipe Manufacturers, Inc., Rm. 2100, 100 N. LaSalle St., Chicago 2, Illinois.**

"GOLD BOND" PRODUCTS INFORMATION. Manufacturer of over 150 nationally advertised building products will send latest catalog, including complete information on insulation board, gypsum board, lath, plaster and lime, rock wool, metal lath and paint products. **National Gypsum Company, Buffalo 2, N. Y.**

CABINET HARDWARE DISPLAY BOARD for counter use. Period furniture trim counter display board. Available to dealers with the National Lock line. Contact your jobber or write **National Lock Co., Rockford, Ill.**

ALUMINUM ROOFING, SIDING. Details of the New Holland Dealer Profit-Proposition are now available to dealers on request, including prices, discounts, deliveries. Line includes aluminum roofing, siding and roofing accessories. Write **New Holland Metals Company, Dept. A-49, Mountville, Pa.**

PAINT COLOR MANUAL, color cards, assorted dealer helps are offered dealers for promotion of O'Brien paints. For details address **The O'Brien Corp., Dept. L-4, 101 N. Johnson St., South Bend 21, Ind.**

FINISHING LIME and lime products. For descriptive literature and prices on the complete "Ohio" line write **Ohio Hydrate & Supply Co., Woodville, Ohio.**

FIBERGLAS INSULATION. Information is available on four types of Fiberglas insulation: roll blankets, batt blankets, utility batts and pouring wool for pouring or hand packing. Write **Owens-Corning Fiberglas Corp., Dept. 2020, Toledo 1, Ohio.**

OZARK OAK FLOORING. Detailed information and prices available on this company's selected stock of properly seasoned oak flooring. **The Ozark Oak Flooring Co., Bismarck, Mo.**

BATHROOM CABINETS. For illustrated catalog on the Packard line of seamless drawn bathroom cabinets, portable display stand for dealers' salesrooms, and how to obtain the Packard line, write **Packard Formsteel Corp., 3354 N. Crawford Ave., Chicago 41, Ill.**

FLUSH DOORS—interlocking grid core. Send for illustrated data bulletin setting forth construction features and sales facts. Address **Paine Lumber Co., Ltd., Oshkosh, Wisc.**

MAIL BOX LEAFLET. Wide range of designs and finishes to harmonize with any type outside hardware trim. Address **Penn-Greg Mfg. Co., 2608 Bloomington Ave., Minneapolis 7, Minn.**

PENMETAL PRODUCTS. For catalog covering Penmetal line of metal lath and plastering accessories, together with dealership information, write **Penn Metal Co., Inc., 205 East 42nd St., New York 17, N. Y.**

SHINGLES AND SHAKES. For details about the sales features of Perma prestained shingles and shakes, application, colors, etc., write **Perma Products Company, 7007 Morgan Ave., Cleveland, Ohio.**

PHENIX GARAGE DOORS, all-season combination doors and combination windows. For points of construction and dealer sales data, address **Phenix Manufacturing Co., Inc., 4129 N. Port Washington Rd., Milwaukee 12, Wisc.**

COLOR DYNAMICS. Dealers are invited to check into the consumer sales appeal of color arrangements and other features offered by Pittsburgh Paint. Address **Pittsburgh Plate Glass Co., Pittsburgh 22, Pa.**

GLASS BOOK—four-color illustrated book showing modern uses of glass in the home. Address **Pittsburgh Plate Glass Co., 2143-9 Grant Bldg., Pittsburgh 19, Pa.**

PAINT BRUSHES. For information about construction, balance, quality, write **Pittsburgh Plate Glass Co., Brush Div., Baltimore 29, Md.**

SHINGLE-SHAKE DEALER PLAN. For complete sales plan on Portland Brand Red Cedar Shingles and Skookum Tru-Cut Shakes, write **Portland Shingle Co., 9036 N. Denver Ave., Portland 3, Ore.**

PRESTILE MERCHANDISING KIT. Send for Prestile Mfg. Co.'s free samples and Dealer's Merchandising Kit on "How to Make More Profits from Tileboard." **Prestile Mfg. Co., 2840 Lincoln Ave., Chicago 13, Ill.**

FIREPLACES. A popular book, "100 fireplace ideas," answers many fireplace questions. Also available is information on outdoor fireplaces, outdoor grilles, septic and fuel tanks. Write **Price Fireplace Heater and Tank Corp., 93 Austin St., Buffalo 7, N. Y.**

PRODUCTS - FROM - SWEDEN — flush doors, entrance doors, stainless steel sink tops made to American standards. Address **Products-from-Sweden, Inc., 80 N. Broad St., New York 4, N. Y.**

DEALER PROGRAM DATA. For information on how dealers can merchandise water repellent and preservative chemicals in their communities, address **Protection Products Mfg. Co., Kalamazoo, Mich.**

NEW BUILDING PAPER. Folder 101 is now available on the new Leatherback asphalt-impregnated all-purpose building paper. Write **Protective Papers, Inc., Union, Ill.**

SASH CORD. For literature and sales help on the Puritan line write **Puritan Cordage Mills, Inc., Louisville 6, Ky.**

MATERIAL HANDLING: For literature describing the Rapistan line of equipment for handling lumber and building products in and out of your yard, address **The Rapids-Standard Co., Grand Rapids 2, Mich.**

WATER PAINTS, home repair products, cement paints, fire retardant paints, patching plaster, tile cement, interior casein paint, art colors, texture paint, wall sizes, kalsomine. For detailed information write **The Rear-don Co., St. Louis 6, Chicago 9, Los Angeles 21, Bayonne, N. J., Montreal 1.**

TOOL CATALOG. Shows complete "Red Devil" line of glaziers' tools, wood scrapers, paint conditioners, roller stippler, roller painter, paper hangers and linoleum knives, floor sanders and edgers, electric fencers, etc. Write **Red Devil Tools, Irvington 11, New Jersey.**

PACKAGED VALLEY and FLASHING. Each package contains 10 sheets of Revere solid copper home flashing, nails and instruction book. Easily handled shelf-merchandise. Write **Revere Copper & Brass, Inc., 230 Park Ave., New York 17, N. Y.**

ALUMINUM DEPARTMENT. Dealers are offered help in setting up sales-building aluminum department on aluminum building products by **Reynolds Metals Co., Bldg. Prods. Div., 2002 S. 9th St., Louisville 1, Ky.**

GARAGE DOOR HARDWARE—Richards-Wilcox No. 999 for hanging overhead garage doors. Ask for folder **R-W 999—Richards-Wilcox Mfg. Co., Aurora, Ill.**

BUILDING PAPERS. Information and samples of the complete line of Richkraft Building Papers, including Skufpruf, Silvercote Duplex, Silo Paper Silvercote Reflective Insulation and Richglaze Plastic Glazing write **The Richkraft Company, 228 N. LaSalle St., Chicago 1, Ill.**

LAMINATED RAFTERS. Literature illustrating and describing Rilco Laminated rafters for use in construction of farm barns, poultry houses, hog houses, machine sheds, brooder houses, corn-cribs, etc. Write **Rilco Laminated Products, Inc., 2630 First National Bank Bldg., St. Paul 1, Minn.**

WINDOW UNITS — weatherstripped, factory-fitted double-hung, picture unit, kitchen casement unit, bay window unit, basement unit—window and door trim, corner china cases, mantels, attic louvers, wardrobes, telephone shelves, overhead garage door units. Address **Roach & Musser Co., Muscatine, Ia.**

ROBBINS FLOORING. "Permanent and Everlasting" is the title of booklet on Robbins northern hard maple, beech, birch, oak flooring. It is full of valuable flooring information and installation photos. **Robbins Flooring Co., Reed City, Mich.**

DEALERS WANTED. Still some territories open for distribution of metal weather-strip, metal storm windows and screens, combination storm and screen doors. Write **The Robbins Mfg. Co., Dept. 124, 1801 N. Central Park Ave., Chicago 47, Ill.**

PLYWOOD and DOORS. Information about Fir Plywood, Roddiscraft hardwood plywood, solid-core flush doors and the new Housemart lightweight flush door is available by writing **Roddis Plywood Corp., Marshfield, Wis.**

MECHANICAL HANDLING. Get the facts on the economies of handling and piling with Ross carriers and lift-trucks. Address: **The Ross Carrier Company, 235 Miller St., Benton Harbor, Mich.**

REMOVABLE WINDOWS. Complete details appear in the R.O.W. Catalog. Write **R.O.W. Sales Co., Royal Oak, Mich.**

ROXDALE BUILDING PRODUCTS DATA. Latest information on Roxbord, Tileboard, Roxceil Ceiling Material, Roxtrim Stainless Steel and Hardwood Trim, Roxfloor Asphalt Tile and Rubber Tile, and Roxseal Wonder Adhesives. **Roxdale Building Products Corporation, 2916 White Plains Road, New York 67, New York.**

DUBL-COVERAGE, TITE-ON SHINGLES. For latest catalog and literature on Ruberoid's shingles, application, thickness protection, tornado-test and pre-selling program write **The Ruberoid Co., 500 Fifth Ave., New York 18, N. Y.**

SIMPLIFIED HARDWARE. Merchandising plan covering 4 mortise locks and 4 tubular locks of the Russwin line. Contact your jobber or write **Russell & Erwin Div., The American Hardware Corp., New Britain, Conn.**

FENCE PICKETS. Make them yourself. For literature describing the Schubert picket cutter, write **H. A. Schubert Co., 1210 Washington Ave., Wilmette, Ill.**

COMBINATION SASH—new, all metal, self-storing. For literature and prices write **Security Sash & Screen Co., 1757 Puritan, Detroit 3, Mich.**

"PAYSWELL" SPRAYER for spraying on paint, stains, varnish, wood preservatives, insecticides, disinfectants, etc., For information about dealer aids and selling plans, with discount schedule, write **Sellco Corp., 815 Andrus Bldg., Minneapolis 2, Minn.**

BRANDED SASH CORD, packed in cartons. See your local wholesaler or write **Silver Lake Co., Chattahoochee, Ga.**

SISALKRAFT INFORMATION. Prices, samples and dealer helps will be sent you on Sisalkraft Reinforced Building Paper, Sisalation Reinforced Reflective Insulation and Copper-Armored Sisalkraft. Write **The Sisalkraft Co., Dept. AL, 205 W. Wacker Drive, Chicago 6, Ill.**

HARDWARE CATALOG covering the Slaymaker line of builders' items. Write for **catalog No. 376A, Slaymaker Lock Co., Lancaster, Pa.**

FIRE PREVENTION. Portable fire pumps mean quick action against fire. For details write **D. B. Smith & Company, 406 Main St., Utica 2, N. Y.**

PLASTIC GLAZING — for poultry houses, hot beds, cold frames, sun porches, factory windows, sky lights, greenhouses, storm windows, barn windows, etc. For information about 5 roll offer with steel display stand write **Sol-O-Lite Mfg. Co., 4301-05 W. North Ave., Chicago 39, Ill.**

CLOTHES DRYERS—aluminum rotary dryer—all-steel dryer. For catalog write **The Southern Galvanizing Co., Bush St. & B&O R.R., Baltimore 30, Md.**

SOUTHERN PINE BOOKLET—"What's Behind the Southern Pine Assn. Service Seal," contains information about member mill facilities, with a list of suppliers of Southern Pine. Address **Southern Pine Assn., Canal Bldg., New Orleans 4, La.**

CATALOG SHEETS covering push and pull plates, pull handles, lever handles, Dutch door quadrant. Write **Standard Bronze Co., Bayonne 8, N. J.**

MASONRY WATERPROOFING. Send for dealer plan and descriptive circulars on the Thoro system for keeping water out of walls of cellars, garages, cisterns, etc. Address **Standard Dry Wall Products, Inc., Box X, New Eagle, Pa.**

GARAGE DOOR EQUIPMENT—Stanley "Swing-Up" for residential and light commercial openings. For details write **The Stanley Works, Garage Door Dept., New Britain, Conn.**

STEEL GARAGE DOORS. Display door available with either Canopy or Track-Type hardware, and sales helps. Address **Strand Garage Door Div., Detroit Steel Products Co., Dept. AL-4, 2250 E. Grand Blvd., Detroit 11, Mich.**

KITCHEN SPACE SAVERS. Dealers are invited to write for folders and sales information about "Dina-Fold" and "Glydeaway" units that provide space-saving breakfast nook facilities and table space. Address: **Sterling-Freeland Industries, 4701 N. Western Ave., Chicago 25, Ill.**

"HEATFORM" FIREPLACE. Ask about 34-page booklet illustrating and describing construction principles and showing architectural details; also leaflet entitled "Important Fireplace Information." Address **Superior Fireplace Co., 1709 D East 15th St., Los Angeles 21, Calif. or 601-X North Point Rd., Baltimore 6, Md.**

SUPERLITE PANELS. For information about new, high-gloss, plastic finish, baked on panels with design features which reduce dust collection and application cost, write **Superior Wall Products Co., 4413 N. American St., Philadelphia 40, Pa.**

AWNING TYPE WINDOWS for all types construction. Factory-assembled. For descriptive and sales information, write **Super-Vent Co., 905 W. North Ave., Chicago 14, Ill.**

COLORS FOR PLASTER, Mortar, Cement. Write for color cards . . . prices and catalog of 166 items. **Tamms Silica Co., 228 N. LaSalle St., Chicago 1, Ill.**

OVERHEAD DOOR HARDWARE. Write this manufacturer of overhead door hardware for detailed catalog information on the complete line, and particularly about the free model dealers get with their first order. **Tavart Company, Paramount, Calif.**

ASPHALT SHINGLES, ROOFING. Literature on Asphalt Shingles, Asphalt Roofing and Solid Roofing Asphalt may be secured by writing **The Texas Company, Dept. AL, 205 E. 42nd St., New York 17, N. Y.**

FLOORING PRICE LIST. Also information on how you can make flooring profits by tying in with the Texoak merchandising program. Line includes flooring, parquet flooring, stair treads, and thresholds. **Texoak Flooring Co., P.O. Box 480, Crockett, Texas.**

ALUMINUM, STEEL WINDOWS. Residence casements, double hung, basement and utility windows, steel casement doors and door frames. For information about sizes, construction, etc. write **J. S. Thorn Co., Philadelphia 32, Pa.**

WHITE CEMENT, Plain or Waterproofed. For sales points and suggestions on where to recommend white cement, write **Trinity Division, General Portland Cement Co., 111 West Monroe St., Chicago, Ill.**

WOODWORKING MACHINERY. For information on all types and sizes of woodworking machinery write **Turner Machinery Co., 500 Beale St., San Francisco 5, Calif.**

NEW SHEETROCK BOOK. Contains 153 full color illustrations including 59 color photographs of fine interiors using Sheetrock. Address **United States Gypsum Co., 300 W. Adams St., Chicago, Ill.**

FLUSH DOORS, fireproof doors, sliding door frames, panel doors. For complete catalog information address **United States Plywood Corp., New York 18, N. Y. or The Mengel Co., Louisville 1, Ky.**

GLUE DEALER HELPS, counter circulars, counter displays together with lumber dealers' sales plan offered by **United States Plywood Corp., Dept. 443, 55 W. 44th St., New York 18, N. Y.**

PLYWOOD FINISHING—Firzite for finishing fir plywood — Satinlac for hardwood plywood. For lumber dealers' sales plan write **The United States Plywood Corp., 55 W. 44th St., New York 18, N. Y.**

CATALOG LEAFLET showing ornamental iron specialties for new homes or modernizing—for entrance steps, porches, interior or exterior stairways, screen door grilles, canopy support brackets, etc. Write **Valley Metal Products Co., 222 Young St., Marseilles, Ill.**

PACKAGED CHIMNEY. Free booklet is offered on the Van Packer Packaged Chimney ready for installation in any home. Write **Van-Packer Corporation, 134 S. Clark St., Chicago 3, Ill.**

STEEL BASEMENT WINDOWS, with removable sash. For descriptive dealer sales information, write **Vento Steel Products Corp., 239 Colorado Ave., Buffalo 15, N. Y.**

CAULKING EQUIPMENT—guns, nozzles, cartridges. For prices, discounts, other information write **Vital Products Mfg. Co., 7500 Quincy Ave., Cleveland 4, Ohio.**

WAL-LITE CATALOG. Complete information on colors, patterns, panel sizes, ease of installation and other pertinent data on Wal-lite decorative wall board and Moroccan Leatherbord. **Wallace Manufacturing Co., 10th and Fayette, North Kansas City, Mo.**

ELECTRIC HAND SAWS. For your own use—for resale to contractors. Details of dealer plan sent on request. Address **Fred W. Wappat, Inc., 159 Valley St., Mayville, N. Y.**

ALUMINUM WINDOWS — integrally flash-welded joints and corners. For catalog showing styles, architectural details, write **Ware Laboratories, Inc., 1827 Delaware Parkway, Miami 35, Fla.**

VENETIAN SCREEN — bronze 18 louvers to the inch. Cuts to size with shears and tacks on ordinary frames. Contact your jobber or for sample and full information write **Warp Brothers, Chicago, Ill.**

COMBINATION SASH BALANCE — weather strip. Manufacturer offers free hand model, floor display, newspaper mats, envelope stuffers to dealers. Write **The Weatherproof Products Corp., 329 Westport Road, Kansas City 2, Mo.**

1949 METAL TRIMS CATALOG. Dealers are invited to write for the new Chromtrim catalog of metal trim patterns and information about three new 1949 Chromtrim introductory deals. Address **R. D. Werner Co., Inc., 285 Fifth Ave., New York 16, N. Y.**

WESTERN PINE DIRECTORY. Contains list of member mills with breakdown of products they manufacture. Ask **Western Pine Assn., Yeon Bldg., Portland 4, Ore.**

HOME VENTILATOR. Inquire about special offer including 3 ventilators, ventilator display and consumer leaflets. Write **Westinghouse Electric Corporation, Fan Department, 653 Page Boulevard, Springfield 2, Mass.**

"TRU-SIZED" DOORS—precision machined to standard book opening sizes. No sawing, no planing. Simply install hardware and hang. Even priming is eliminated. Available from **Wheeler-Osgood Co., Tacoma 1, Wash.**

WHEELING METAL PRODUCTS. For information about Wheeling Flexbead, Bar-Z Partitions, Bar-x Lath, Diamond Lath, Cornerlath, and Tri-Rib Roof Deck, write **Wheeling Corrugating Co., Wheeling, West Va.**

INSECT WIRE SCREENING — 18x14 mesh, 100-ft. linear rolls. 24-inch to 48-inch widths—galvanized, aluminum, bronze; also poultry netting, nails, hardware cloth. Write **Wickwire Bros. Inc., Cortland, N. Y.**

SHELVING SALES PLAN. Designed to help dealers turn their short length lumber into profit with the Wilmac Level Shelf support display rack and shelf-lumber packaging idea. Write **Wilmac Metal Products Co., 2632 N. Central Ave., Chicago 39, Ill.**

METAL CASINGS for door and window trim. Available with solid flanges or expanded lath wings. For styles, construction features, prices and sales information address **Wollaeger Steel Corp., 61 Broadway, New York 6, N. Y.**

BALSAM-WOOL INSULATION. Complete data covering specifications and the new Balsam-Wool accelerated advertising and merchandising program, sales literature, counter displays, window streamers, dealer mats and publicity to promote dealer sales may be secured from **Wood Conversion Company, Dept. 120-49, First National Bank Building, St. Paul 1, Minn.**

"MOST-WANTED" HARDWARE. Yale's "Hardware Store within a Store" enables dealers to carry a stock of "most wanted" hardware within a space of 25 square feet. For complete information ask your distributor or write **The Yale & Towne Mfg. Co., Stamford, Conn.**

WEATHERSTRIP, SASH BALANCE combination. The "Dura-Seal" folder contains full information. See your jobber or write **Zegers, Inc., 8088 S. Chicago Ave., Chicago 17, Ill.**

VERMICULITE INSULATION. Complete information is offered interested dealers on Zonolite fill insulation, insulating concrete, insulating plaster by **Zonolite Co., Dept. ALM-49, 135 S. LaSalle St., Chicago 3, Ill.**

DIRECTORY OF ASSOCIATIONS

RETAIL ASSOCIATIONS

NATIONAL RETAIL LUMBER DEALERS' ASSOCIATION

302 Ring Bldg., Washington 6, D. C.
H. R. Northrup, secretary-manager

Arizona Retail Lumber & Builders Supply association: Gus M. Michaels, secretary-manager, 414 Luhrs building, Phoenix.

Arkansas Association of Lumber Dealers: E. DeMatt Henderson, secretary; Boyle building, Little Rock.

Carolina Lumber & Building Supply association: E. M. Garner, secretary, 114 Builders building, Charlotte.

Central Kansas Lumbermen's association: M. L. Doner, secretary, Salina.

Central Missouri Association of Retail Lumber Dealers: Hy Guhleman, secretary, Jefferson City.

Florida Lumber & Millwork association: Mrs. Marie M. Bennett, secretary, P. O. Box 3666, Orlando.

Illinois Lumber & Material Dealers' association: J. D. McCarthy, secretary, 919 Ridgely building, Springfield.

Independent Retail Lumber Dealers' association: Edwin W. Elmer, secretary, 303 Wesley Temple Bldg., Minneapolis.

Indiana Lumber & Builders' Supply association: R. W. Slagle, secretary, 620 K. of P. Bldg., Indianapolis.

Intermountain Lumber Dealers' association: C. W. Nortz, secretary, 712 Newhouse Bldg., Salt Lake City 1.

Iowa Retail Lumbermen's association: W. H. Badeaux, secretary, 1912 Grand Ave., Des Moines 14.

Kentucky Retail Lumber Dealers' association: Donald A. Campbell, secretary, Lebanon.

Louisiana Retail Lumber & Building Material Dealers' association: R. Needham Ball, secretary, 528 Florida St., Baton Rouge.

Lumber & Supply Dealers' council of Georgia: J. G. Rowell, 1925 Ponce de Leon Ave. N.E., Atlanta, Ga.

Lumber Dealers' Association of Connecticut: William P. Beach, secretary, P. O. Box 1662, New Haven.

Lumber Dealers' Association of Western Pennsylvania: R. F. McCrea, secretary, Plaza building, Pittsburgh 19.

Lumber Merchants' Association of Northern California: Robt. J. Wright, exec. v. p., 214 Front St., San Francisco.

Lumber Trade Association of Cook County: J. L. Strong, secretary, 30 North LaSalle street, Chicago 2.

Lumbermen's Association of Texas: Gene Ebersole, executive vice president, Second National Bank building, Houston.

Maine, Retail Lumber Dealers' Association of: Ralph E. Jordan, secretary-treasurer, P. O. Box 236, Lewiston.

Maryland, Retail Lumber Dealers Association of: Lee J. Etelson, Lee Lumber & Supply company, Baltimore.

Massachusetts Retail Lumber Dealers' association: Willis F. Atkinson, secretary, c/o W. E. Atkinson company, Newburyport.

Michigtn Retail Lumber Dealers' association: Hunter M. Gaines, secretary, Bank of Lansing Bldg., Lansing 68.

Middle Atlantic Lumbermen's association: Robert A. Jones, secretary, 1528 Walnut St., Philadelphia 2.

Mississippi Retail Lumber Dealers' association: E. B. Lemmons, secretary, Deposit Guaranty Bank building, Jackson 14.

Montana Retail Lumbermen's association: W. J. Howard, secretary-manager, 107 E. Main, Missoula, Montana.

Mountain States Lumber Dealers' association: Joseph V. Smith, secretary-manager, Colorado National Bank building, Denver.

Nebraska Lumber Merchants' association: Phil Runion, secretary, Terminal building, Lincoln 8.

New Hampshire Retail Lumbermen's association: Harold Greatorex, secretary, Meredith.

New Jersey Lumbermen's association: Edw. C. Frick, secretary, 1060 Broad street, Newark 2.

New York Lumber Trade association: R. W. Holt, manager, Grand Central Terminal, New York.

North Dakota Retail Lumbermen's association: Maynard A. Finch, Secy., P. O. Box 534, Fargo.

Northeast Missouri Lumbermen's association: O. W. Hetrick, secretary-treasurer, Columbia.

Northeastern Retail Lumbermen's association: Paul S. Collier, secretary-manager, 82 St. Paul street, Rochester 4, N. Y.

Northern Indiana & Southern Michigan Retail Lumber Dealers' association: Robert Chamberlain, secretary, South Bend, Ind.

Northwest Missouri Retail Lumbermen's association: Elmer Ford, secretary c/o Hyde Valley Lumber company, St. Joseph, Mo.

Northwesttrn Lumbermen's association: W. H. Badeaux, secretary, 1013 Fourth Ave., Minneapolis 2.

Ohio Association of Retail Lumber Dealers: Findley M. Torrence, secretary, Green and Market streets, Xenia, Ohio.

Oklahoma Lumbermen's association: W. M. Morgan, Manager, Leonhardt Bldg., Oklahoma City.

Oregon Retail Lumbermen's association: C. A. Fariss, secretary, Western Lumber Co., Portland.

Rhode Island Lumber Dealers' association: J. Marshall Peters, secretary, E. E. Smith Lumber Company, Inc., Providence.

South Dakota Retail Lumbermen's association: Hiram G. Ross, secretary, c/o H. W. Ross Lumber company, Sioux Falls.

Southern Missouri Retail Lumber Dealers' association: W. T. Nethery, secretary, Hayti, Mo.

Southern California Retail Lumbermen's association: Orrie W. Hamilton, secretary-manager, 111 West Seventh street, Los Angeles.

Southwest Missouri Retail Lumber Dealers' association: Grover McSpadden, secretary, Springfield.

Southwestern Iowa Retail Lumbermen's association: J. Stivers, secretary-treasurer, c/o Crawford Lumber company, Council Bluffs.

Southwestern Lumbermen's association: Allan T. Flint, secretary-manager, R. A. Long building, Kansas City 6.

Tennessee Lumber, Millwork & Supply Dealers' association: R. O. Brownlee, secretary-manager, 106 East Fifth Avenue, Knoxville.

Texas Line Yard Retail Lumber Dealers' association: George H. Zimmerman, secretary, Waco.

Vermont Retail Lumber Dealers' association: Walter Kangas, secretary, c/o E. R. Wiggins Builders Supplies, Chester, Vt.

Virginia Building Material association: Harris Mitchell, secretary-manager, 3303 Monument avenue, Richmond 21.

Western Retail Lumbermen's association (U.S.): W. C. Bell, managing director, 1319 W. Nickerson, Seattle 99, Wash.

West Virginia Lumber & Builders' Supply Dealers' association: Sam H. Diemer, secretary, Box 1589, Fairmont, W. Va.

Wisconsin Retail Lumbermen's association: Don S. Montgomery, secretary, 501 Milwaukee Gas Co. Bldg., Milwaukee 2.

LUMBER MANUFACTURERS' ASSOCIATIONS

NATIONAL LUMBER MANUFACTURERS' ASSOCIATION

1319 Eighteenth Street, N. W.
Washington 6, D. C.
R. A. Colgan, executive vice president

American Walnut Maunfacturers' association: Burdett Green, secretary, 666 N. Lake Shore, Chicago.

Appalachian Hardwood Manufacturers, Inc.: C. H. Clendening, secretary-manager, 414 Walnut street, Cincinnati 2.

California Redwood association: Kenneth Smith, president, 405 Montgomery street, San Francisco 4.

Carolina Virginia Lumbermen's Club: H. Wiley Sholer, secretary-treasurer, P. O. Box 623, Lenoir, N. C.

Douglas Fir Plywood association: Charles E. Devlin, managing director, Tacoma building, Tacoma 2.

Hardwood Dimension Manufacturers' association: Louis J. Bosse, secretary-treasurer, Heyburn building, Louisville.

Indiana Hardwood Lumbermen's association: Roy C. Brundage, secretary-treasurer, West Lafayette, Ind.

Mahogany Association, Inc.: George N. Lamb, secretary-manager, 75 East Wacker drive, Chicago 1.

Maine Hardwood Manufacturers' association: Everett F. Greaton, secretary, Auburn.

Maple Flooring Manufacturers' association: Lloyd M. Clady, secretary-manager, 46 Washington Blvd., Oshkosh 2, Wis.

Michigan Sawmill Operators' association: Glenn Murray, secretary-manager, c/o Murray Brothers, Dexter, Mich.

Montana Lumber Manufacturers' association: Maurice E. Boorman, sec., Noffsinger Block, Kalispell, Mont.

National Hardwood Lumber association: John W. McClure, secretary, 59 East Van Buren street, Chicago 5.

National Oak Flooring Manufacturers' association: Henry H. Willins, secretary, 814 Sterick Bldg., Memphis.

New England Lumbermen's association: D. L. Bennett, secretary, Amoskeag Bank building, Manchester, N. H.

Northeastern Lumber Manufacturers' association: R. R. Broderick, secretary, 271 Madison avenue, New York 16.

Northern Hemlock & Hardwood Manufacturers' association: O. T. Swan,

Northern Pine Manufacturers' association: W. A. Ellinger, secretary, 4329 Oakland Ave., Minneapolis 7, Minn.
secretary-manager, Oshkosh, Wis.

Port Orford Cedar Lumber association: c/o B. V. Hancock, secretary, Evans Products company, Marshfield, Ore.

Southeastern Hardwood Manufacturers' Club: Ethalind McCarthy, temporary secretary, Box 448, Jacksonville 1.

Southern Cypress Manufacturers' association: J. A. Prestridge, secretary, Barnett National Bank building, Jacksonville 1.

Southern Hardwood Producers, Inc.: C. E. Miller, secretary-manager, Sterick building, Memphis.

Southern Pine association: H. C. Berckes, secretary-manager, P. O. Box 1170, New Orleans 4.

Southern Woodwork association: W. B. Willingham, Jr., P. O. Box 2213, Atlanta.

The Veneer association: Charles E. Close, secretary-treasurer, 616 South Michigan avenue, Chicago 5.

West Coast Lumbermen's association: H. V. Simpson, executive vice president, 1410 S. W. Morrison St., Portland 5, Ore.

West Side Hardwood Club: O. S. Robinson, secretary, Box 174, Camden, Ark.

West Side Lumber association: W. W. Findley, secretary-treasurer and manager, Little Rock.

Western Pine association: S. V. Fullaway, Jr., secretary-manager, Yeon building, Portland 4, Ore.

Western Red & Northern White Cedar association: W. H. Jones, sec.-mgr., Peyton building, Spokane 8.

Willamette Valley Lumbermen's association: H. J. Cox, secretary-manager, P. O. Box 112, Eugene, Ore.

WHOLESALE AND COMMISSION LUMBER ASSOCIATIONS

Associated Lumber & Allied Materials Salesmen of New Jersey (ALAMS): Milton L. Dake, secretary, 144 Milton place, South Orange.

Carolina Lumber & Material Salesmen's association: George W. French, secretary, Charlotte, N. C.

Empire State Lumber Salesmen's association: John C. Artz, secretary, 82 St. Paul street, Rochester 4, N. Y.

Long Island Salesmen's association: R. H. Delano, secretary, 126 Maple street, Great Neck, N. Y.

Michigan Association of Traveling Lumber & Sash Door Salesmen: A. C. Blixberg, secretary, 3310 Hazelwood avenue, Detroit 6.

Mississippi Valley Lumber & Sash & Door Salesmen's association: Fred B. Anderson, secretary, F. B. Anderson Lumber company, Minneapolis.

National-American Wholesale Lumber association: Sid L. Darling, secretary, 41 East 42nd street, New York.

National Association of Hardwood Wholesalers: G. A. Vangsness, secretary, 166 West Jackson boulevard, Chicago 4.

National Associations of Commission Lumber Salesmen, Inc., 4903 Delmar Blvd., St. Louis 8.

National Hardwood Lumber association: John W. McClure, secretary, 59 East Van Buren street, Chicago 5.

National Wholesale Lumber association: J. Jackson Kidd, secretary, Kidd & Buckingham Lumber company, Baltimore.

New England Wholesale Lumber association: David M. Osborne, secretary, Osborne Lumber company, Boston.

Northwestern Hardwood Lumbermen's association: A. F. Wellesley, secretary, Minneapolis.

Pacific Coast Wholesale Hardwood Distributors' association: James Davis, secretary, Davis Hardwood company, San Francisco.

Southern Wholesale Lumber association: Robert F. Darrah, 700 Jackson building, Birmingham, Ala.

Union Association of Lumber & Sash & Door Salesmen: R. R. Adams, secretary, 435 West Bancroft Street, Toledo, Ohio.

WOODWORKING, LOGGING AND MISCELLANEOUS LUMBER AND ALLIED ORGANIZATIONS

American Box Shook Export association, Barr building, Washington 6, D. C. C. D. Hudson, manager.

American Forest Products Industries, Inc., 1319 Eighteenth street, N. W., Washington 6, D. C. Richard A. Colgan, Jr., manager; Henry Bahr, secretary.

American Forestry association, 919 Seventeenth street, Washington 6, D. C. Ovid Butler, executive secretary.

American Hardwood Exporters, Inc., 602 Carondelet building, New Orleans. A. E. Hegeswisch, sec.

American Veneer Package association, 2101 K street, N. W., Washington 7, D. C. Robert W. Davis, secretary-manager.

American Wood Preservers' association, 1427 Eye street, N. W., Washington 5, D. C. Horace L. Dawson, secretary.

Arkansas Soft Pine Bureau, Boyle building, Little Rock, Ark. Robert H. Brooks, manager.

Associated Cooperage Industries of America, 408 Olive street, St. Louis 2. M. T. Rogers, secretary.

Association of State Foresters, Glen R. Durrell, sec., Oklahoma City.

Blackfoot Forest Protective association, Charles P. Keim, secretary, Box 1167, Missoula, Mont.

California Lumbermen's Accident Prevention association, 1924 Broadway, Oakland 12, Calif. D. N. Edwards, secretary.

Cedar Chest Manufacturers of America, American Furniture Mart, 666 Lake Shore drive, Chicago 11. D. H. Caswell, secretary.

Central Committee on Lumber Standards, Washington, D. C. L. W. Smith, sec.

Douglas Fir Export company, 1125 Henry building, Seattle. L. E. Force, gen. mgr.

Eastern Woodwork Bureau, 103 Park avenue, New York. Wm. Lucas, sec.

Fir Door Institute, Tacoma building, Tacoma. John O'Hara Harte, Mgr.

Forest Farmers Association Cooperative, Colin P. Kelly, executive director; Wayne G. Miller, executive secretary, P. O. Box 692, Valdosta, Ga.

Hardwood Plywood Institute, 616 South Michigan avenue, Chicago 5. Charles Close, secretary.

Hickory Handle association, Hope, Ark. Guy E. Basye, sec.

Intercoastal Lumber Distributors' association, 205 East 42nd street, New York 17. E. M. Battenberg, secretary.

Intermountain Logging Conference, c/o Charles P. Keim, secretary, 447 North Higgins avenue, Missoula, Mont.

International Concatenated Order of Hoo-Hoo, 404 East Wisconsin avenue, Milwaukee. Ben F. Springer, secretary.

Lumber Manufacturers Association of Southern New England, Ansonia, Conn. Theodore L. Bristol, sec.

Michigan Sawmill Operators' association, c/o Forestry Department, Michigan State college, Lansing. Glenn D. Murray, secretary-manager.

National Association of Wood Heel Manufacturers, 191 Merrimack street, Haverhill, Mass. Arthur A. Mullins, exec. sec.

National Door Manufacturers' association, 332 South Michigan avenue, Chicago 4. Ormie C. Lance, secretary-manager.

National Handle Manufacturers association, Arcola, Ill. Frank F. Collins, sec.

National Lumber Exporters association, Sterick building, Memphis. Douglas F. Heuer, secretary.

National Plywood Distributors' association: 20 N. Wacker Dr., Chicago 6, Ill. B. E. Babbitt, managing director.

National Wooden Box association, Barr building, Washington 6. D. C. C. D. Hudson, secretary.

Pacific Forest Industries, Inc., Tacoma building, Tacoma. Axel H. Oxholm, managing dir.

Pacific Logging Congress, American Bank building, Portland 5, Ore. A. Whisnant, secretary.

Pacific Lumber Carriers association, 311 California street, San Francisco. Robert C. Parker, chairman.

Pacific Lumber Inspection Bureau, Inc., White-Henry-Stuart building, Seattle 1. Frank L. Rogers, secretary-manager.

Pacific Northwest Loggers association, Stuart building, Seattle 1. E. T. Clark, secretary.

Pacific Northwest Wholesale Sash & Door association, 1117 "A" street, Tacoma 1. B. G. Young, secretary.

Pacific Northwest Woodwork association, 3800 Seventh avenue, S., Seattle. E. E. Vogue, secretary.

Pencil Makers association (wood cased lead pencils), 500 Willow avenue, Hoboken, N. J. John K. Reckford, sec.

Ponderosa Pine Woodwork, 111 West Washington street, Chicago 2. E. W. Ruddick, general manager.

Prefabricated Home Manufacturers' Institute, Shoreham building, Washington, D. C. Harry H. Steidle, managing director.

Railway Tie association, 610 Shell building, St. Louis 3. Roy M. Edmonds, secretary.

Red Cedar Shingle Bureau, White building, Seattle. W. W. Woodbridge, secretary-manager.

Roofer Manufacturers' association, W. R. Melton, secretary, Cuthbert, Ga.

Shook Exporters association (for wooden containers), Pekin, Ill. H. G. Herget, chairman.

Society of American Foresters, 825 Mills building, Washington, D. C. Henry E. Clepper, executive secretary.

Southeastern Box & Shook Manufacturers' association, Johnston building, Charlotte, N. C. Joseph Gall, sec.

Southern Hardwood Traffic association, Commerce Title building, Memphis. C. A. New, secretary.

Southern Pine Inspection Bureau, A. S. Boisfontaine, secretary-manager. Canal building, New Orleans 4.

Southern Sash & Door Jobbers association, Sterick building, Memphis. W. A. Seagle, secretary

Southern States Forest Fire Commission, W. L. Shaddix, secretary, Double Springs, Ala.

Southern Woodwork association, P. O. Box 2213, Atlanta. W. B. Willingham, Jr., secretary.

Texas Mill Managers' association, A. E. Cudlipp, secretary, Box 58, Lufkin, Tex.

Texas Millwork association, P. O. Box 1854, San Antonio. H. T. Didesch, secretary.

Upper Peninsula Timber Producers association, Lawrence P. Walsh, secretary, Ontonago, Mich.

Washington Forest Fire association, 949 Henry building, Seattle. O. Byrstrom, secretary.

Western Forest Industries association: R. T. Titus, executive secretary, Portland, Ore.

Western Forestry & Conservation association, Henry building, Seattle. Clyde S. Martin, secretary.

Willamette Valley Logging Conference, P. O. Box 929, Eugene, Ore. H. J. Cox, secretary.

Wood-For-Venetians association, 5410 Wilshire boulevard, Los Angeles 36. F. M. Binnion, secretary-manager.

Wood Hat Block Manufacturers association, 1440 Broadway, New York. Louis Mehlman, sec.

Wood Turners Service Bureau, Statler Office building, Boston 16. (Miss) Sigrid E. Swanson, executive secretary.

Wooden Box Institute, Call building, San Francisco. Jack H. Dobbin, president.

Wooden Pail & Tub association, 10 McKinley street, Keene, N. H. W. M. Barnard, exec. sec.

Woodwork Jobbers Service Bureau, 30 North La Salle street, Chicago 2. Adolph Pfund, secretary.

BUILDING MATERIALS AND ALLIED ASSOCIATIONS

American Concrete Pipe association, 228 N. LaSalle St., Chicago, Howard F. Peckworth, managing director.

American Hardware Manufacturers' association, 342 Madison avenue, New York.

American Paper & Pulp association, 122 East 42nd street, New York. E. W. Tinker, executive secretary.

American Turpentine Farmers Association Cooperative, 108 West Hill aveniue, Valdosta, Ga. J. Lundie Smith, Jr., secretary.

American Zinc Institute, Inc., 60 East 42nd street, New York 17. Ernest V. Gent, secretary.

Asbestos Cement Products association: Chester C. Kelsey, mgr., 509 Madison Ave., New York 22, N. Y.

Asphalt Roofing Industry Bureau, 2 West 45th street, New York 19. J. S. Bryant, managing director.

Asphalt Tile Institute: C. B. Whittelsey, Jr., managing director, 101 Park Ave., New York 17, N. Y.

Brick Manufacturers' Association of America, merged with Structural Clay Products Institute.

Building Material Exhibitors association, 30 North La Salle street, Chicago 2. Adolph Pfund, secretary.

Clay Products association, 100 No. LaSalle street, Chicago 2. John D. Cook, secretary.

Gypsum association: L. H. Yeager, secretary-manager, 330 So. Wells St., Chicago.

Insect Wire Screen Cloth Bureau, 74 Trinity place, New York 6. Ralph W. Bacon, secretary.

Insulation Board Institute, 111 West Washington street, Chicago 2. J. B. Blackburn, manager and secretary.

Lead Industries association: 2217 "O" St., Lincoln 8, Nebr.

Metal Lath Manufacturers' association, 636 Engineers building, Cleveland 14, W. B. Turner, commissioner.

Metal Window Institute: George Hingston, exec. secretary, 806 Rowland Road, Chalteham, Pa.

National Association of Furniture Manufacturers, 666 Lake Shore Drive, Chicago, J. C. McCarthy, managing director.

National Clay Pipe Manufacturers, Inc.: 100 No. LaSalle St., Chicago 2, Ill. John D. Cook, secy.-treas.

National Clean Up & Paint Up Campaign Bureau, 1500 Rhode Island avenue, N. W. Washington, D. C. Ralph W. Emerson, executive secretary.

National Coal association, 804 Southern building, Washington 5, D. C. J. D. Battle, executive vice-president.

National Concrete Masonry association, 38 S. Dearborn St., Chicago, E. W. Dienhart, executive secretary.

National Electrical Manufacturers' association, 155 East 44th street, New York 17. W. J. Donald, managing director; George B. Cumming, general secretary.

National Glass Distributors association, 435 North Michigan avenue, Chicago 11. North Storms, secretary.

National Industrial Sand association, 1325 E St. N.W., Washington, D. C., V. P. Ahearn, executive secretary.

National Lime association, 927 Fifteenth street, N. W., Washington 5, D. C. Walter S. Stauffer, president and general manager; W. Vernon Brunbaugh, secretary.

National Mineral Wool association, 1270 Sixth Avenue, New York 20, Fred H. Sides, Jr., secretary.

National Paint, Varnish & Lacquer association, 1500 Rhode Island avenue, N. W., Washington 5, D. C. Reuel W. Elton, secretary.

National Ready Mixed Concrete association, 1325 E St., N.W., Washington, D. C., V. P. Ahearn, executive secretary.

National Sand & Gravel association, 1325 E St., N.W., Washington, D. C., V. P. Ahearn, executive secretary.

Plumbing & Heating Industries Bureau, 35 East Wacker drive, Chicago 1. Norman J. Radder, secretary.

Portland Cement association, 33 West Grand Avenue, Chicago 10, C. D. Franks, vice president.

Producers Council, Inc., 815 15th, N. W., Washington 5, D. C., C. M. Martensen, managing director.

Stoker Manufacturers' association, 307 North Michigan avenue, Chicago 1. Marc G. Bluth, executive secretary.

Structural Clay Products Institute, 1756 K street, N. W., Washington, D. C. J. J. Cermak, managing director.

Wall Paper Institute, 400 Madison Ave., New York 17, N. Y. W. L. Carver, secretary.

TECHNICAL AND PROFESSIONAL ASSOCIATIONS

Adhesives Manufacturers' Association of America, 441 Lexington avenue, New York. Edward J. Steiger, managing dir.

Alabama-Florida Turpentine Producers association, Bay Minette, Ala. E. Davidson, sec.

Allied Building Metal Industries, 101 Park avenue, New York. A. W. Nelson, pres.

American Box Shook Export association, 308 Barr building, Washington, D. C. C. D. Hudson, mgr.

American Concrete Institute, New Center building, Detroit 2. Harvey Whipple, sec.

American Hardware Manufacturers' association, 342 Madison avenue, New York. Charles F. Rockwell, sec.

American Institute of Real Estate Appraisers of National Association of Real Estate Boards, 22 West Monroe street, Chicago. Herbert U. Nelson, executive vice president.

American Ladder Institute, 1559 Burbank road, Wooster, Ohio. J. E. Weiser, sec.

American Leather Belting association, 100 Gold street, New York. J. Louis Nelson, sec.

American Pulpwood association, 220 East 42nd street, New York. H. E. Brinckerhoff, exec. sec.

American Society of Agricultural Engineers, Box 229, St. Joseph, Mich. Raymond Olney, sec.

American Society of Heating & Ventilating Engineers, 51 Madison avenue, New York city. A. V. Hutchinson, secretary.

American Society of Mechanical Engineers, 29 West 39th street, New York. C. E. Davies, secretary.

American Society for Testing Materials, 260 S. Broad street, Philadelphia. C. L. Warwick, sec.

American Soda Pulp Export association, 230 Park avenue, New York. C. A. Clough, sec.

American Standards association, 29 West 39th street, New York City. P. G. Agnew, secretary.

American Supply & Machinery Mfr. association, 1108 Clark building, Pittsburgh. R. Kennedy Hanson, sec.

Association of Mfrs. of Wood-Working Machinery, c/o Porter Machinery company, Grand Rapids, Mich. C. O. Porter, pres.

Barn Equipment association, Board of Trade Bldg., Chicago 4, Ill., W. Floyd Keepers, exec. secy.

Cement Institute, 111 West Washington street, Chicago 2. A. E. Hjerpe, secretary.

Eastern Wooden Box association, 80 Boylston street, Boston, C. D. Hudson, pres.

Farm Equipment Institute, 608 So. Dearborn street, Chicago 5. Robert A. Jones, sec.

Glazed Brick & Tile Institute, 1427 Eye street, Washington, D. C. J. J. Cermak, sec.

National Association of Blocking Wood Manufacturers (used by photoengravers etc.), 270 Broadway, New York. John R. Egner, sec.

National Association of Home Builders: Frank W. Cortright, executive vice president, 1737 K street N. W., Washington, D. C.

National Crushed Stone association, 1735 14th street, Washington, D. C. J. R. Boyd, admin. dir.

National Fire Protection association, 60 Batterymarch street, Boston. Percy Bugbee, general manager.

National Warm Air Heating & Air Conditioning association, 5 East Long street, Columbus, Ohio. George Boeddener, managing dir.

Pacific Coast Asphalt Shingle & Roofing Institute (mfrs.), 1151 South Broadway, Los Angeles. Sylvester L. Weaver, pres.

Pacific Coast Association of Pulp & Paper Manufacturers, Longview, Wash. R. S. Wertheimer, sec.

Plywood Package Institute, 19 West 44th street, New York. Robert D. Magill, sec.

Society of Residential Appraisers, 221 North La Salle street, Chicago. F. Hardinge, Jr., secretary.

Soda Pulp Manufacturers' association (wood pulp products), 230 Park avenue, New York. R. I. Worrell, sec.

U. S. Pulp Producers association, 122 East 42nd street, New York. Oliver M. Porter, sec.

United States Savings & Loan League, LaSalle-Wacker building, Chicago. Morton Bodfish, executive vice president.

CANADIAN LUMBER ASSOCIATIONS

British Columbia Loggers' association: John M. Burke, manager, Vancouver, B. C.

British Columbia Lumber & Shingle Manufacturers' association: T. H. Wilkinson, secretary, Vancouver, B. C.

British Columbia Truck Loggers' association: F. H. Adams, Nanaimo, B. C., secretary.

Canadian Forestry association: Robson Black, president and general manager, Montreal, Que.

Canadian Hardwood Bureau: Affiliated as part of Canadian Lumbermen's Assn.

Canadian Lumber Distributors' Bureau: Affiliated as part of Canadian Lumbermen's Assn.

Canadian Lumbermen's association: Victoria building, Ottawa, Canada. W. J. LeClair, secretary-manager.

Canadian Spruce Bureau: Affiliated as part of Canadian Lumbermen's Assn.

Consolidated Red Cedar Shingle association of British Columbia, Metropolitan building, Vancouver, B. C. G. S. Raphael, secretary-manager.

Interior British Columbia Lumber Manufacturers' association: O. S. Harris, president, Canoe, B. C.

Maritime Lumber Bureau: R. S. Cumming, secretary-manager, P. O. Box 264, Amherst, N. S.

New Brunswick Retail Lumber Dealers' association: R. S. Cummings, secretary, P. O. Box 264, Amherst, N. S.

Northern Interior Lumbermen's association: Hugh Dalton, general secretary; Vancouver, B. C.

Ontario Retail Lumber Dealers' association: Horace Boultbee, secretary-manager, 229 Yonge street, Toronto 2, Ont.

Province of Quebec Lumber Dealers & Manufacturers' association: E. H. Begin, secretary, Gatehouse building, Montreal, Que.

Quebec Province Wholesale Lumber association: Gordon D. Grimshaw, secretary, 3610 Oxenden Ave., Montreal, P. Q.

Western Lumber Manufacturers' Association of Canada: Earl C. King, secretary, Vancouver, B. C.

Western Retail Lumbermen's Association of Canada: Hector Craig, secretary, 407 Scott Block, Winnipeg, Man.

White Pine Bureau: Affiliated as part of Canadian Lumbermen's association.

Wholesale Lumber Dealers' Association of Toronto: H. J. Luck, secretary, Toronto, Ont.

Woodwork Jobbers

ALABAMA

Anniston Hdwe Co Anniston
Birmingham Sash & Door Co Birmingham Ala
Cole Mfg Co 3901 First Av N Birmingham
Moore-Handley Hdwe Co Birmingham
Wimberly and Thomas Hdwe Co Inc Birmingham
McGowin-Lyons Hdwe & Supply Co Mobile
McPhillips Mfg Co Mobile
Underwood Coal & Supply Co Mobile
Bloch Brothers Selma
Allen & Jemison Co Tuscaloosa

ARIZONA

Arizona Sash Door & Glass Co Phoenix and Tucson
Galbraith Steel & Supply Co Phoenix
Charles R West Phoenix
Southwestern Sash & Door Co Inc Tucson & Phoenix

ARKANSAS

Dyke Bros Fort Smith North Little Rock Texarkana
Long-Bell Lbr Co Fort Smith
Kenney Brothers Fort Smith
Western Door & Plywood Corp Fort Smith
Cole Mfg Co Little Rock
Scott Sash & Door Co Little Rock
Arkmo Lbr Co North Little Rock
Standard Lumber Co Pine Bluff
Wm Cameron & Co Inc Texarkana

CALIFORNIA

Theodore Kornweibel Alhambra
T V Walker & Son Burbank
H W Brown Sash & Door Co 1913 E Florence Los Angeles
California Door Co Los Angeles
T M Cobb 5800 S Central Av Los Angeles & San Diego
Cole Door & Plywood Co 1049 E Slauson Ave Los Angeles
H W Koll Mill & Lbr Co Los Angeles
MacDougall Door & Plywood Co 2035 E 51st Los Angeles
Patten-Blinn Lbr Co 521 E 5th St Los Angeles
Geo E Ream Co 235 S Alameda St Los Angeles
California Builders Supply Co Oakland
Davis Millwork Co 1915 Adeline St Oakland
Downes & Spelman 2309 Adeline St Oakland
Lincoln Lbr Co 2201 E 14th St Oakland
Western Door & Sash Co Oakland and Berkeley
Wholesale Bldg Sup Co 1607 32nd St Oakland
California Bldrs Supply Co Ltd 19th & S Sts Sacramento
W P Fuller & Co Sacramento San Diego San Francisco
Walter G Brobeck 153 Kearney St San Francisco
Harbor Plywood Corp of Calif 540 10th St San Francisco
Nicolai Door Sales Co of Calif San Francisco
San Francisco Sash & Door Co 290 Valencia St San Francisco
Harrison Wholesale Co Santa Barbara
Pacific Mfg Co Santa Clara
Haley Brothers Santa Monica
Lumber Distributors Inc Stockton

COLORADO

Denver Reserve Supply Co 901 Wazee St Denver
Walter Lindsey Lbr & Supplies P O Box 7145 Denver
Lumber Dealers Inc 1301 Wazee St Denver and Pueblo
Sterling Lbr & Investment Co Denver

CONNECTICUT

Cleary Millwork Co Inc Ansonia
Patmore Millwork Inc Bridgeport
Brockway-Smith-Haigh-Lovell Co Hamden
Rogers Sash & Door Co New Britain & Hartford
Hotchkiss Bros Co Torrington

DELAWARE

Morgan Millwork Co Inc Wilmington

DIST. OF COLUMBIA

Johnson & Wimsatt 9th & Maine Ave SW Washington

FLORIDA

Gate City Sash & Door Co Ft Lauderdale and Miami
Baird Hardware Co Gainesville
Atlanta Oak Flooring Co Jacksonville
Harbor Plywood Corp Jacksonville
Henderson-Fouraker Lumber Co Jacksonville
Huttig Sash & Door Co Jacksonville and Miami
Jacksonville Sash & Door Co Jacksonville
Wm Curry's Sons Co Key West
Lindsley Lumber Corp Miami
A H Ramsey & Sons Inc Miami
Knight & Wall Company Tampa
Krauss Bros Lbr Co of Fla Tampa

GEORGIA

Addison-Rudesal Co Atlanta
East Side Lumber & Coal Atlanta
Harbor Plywood Corp Atlanta
Augusta Lumber Co Augusta
Johnson Lbr Co Box 191 Moultrie
Neal Blun Co Savannah

IDAHO

W P Fuller & Co Boise
Idaho Supplies Inc Grangeville Lewiston Moscow

ILLINOIS

Clifford E Lamb Aurora
Buhai Sash & Door Co 3743 Belmont Av Chgo
Central Millwork Co 4920½ W Fullerton Chgo
Chicago & Riverdale Lbr Co 341 E 136 Pl Chgo
Curtis Companies Inc 1414 S Western Av Chgo 8
Fiddes-Moore & Co 228 N La Salle Chicago
Hannapel Door & Plywood Co 525 W 76th Chgo
Harbor Plywood Corp 1444 W Cermak Rd Chgo 8
C L Ibsen Co 2139 Elston Av Chgo
F T Kartheiser Co 1911 N Harlem Ave Chicago
Knudson & Mercer Lbr Co 28 E Jackson Blvd Chicago
Melrose Mill Co 4257 Lincoln Av Chgo
Morgan Sash & Door Co 2287 Blue Island Chgo
Pacific Mutual Door Co 2141 S Throop St Chicago 8
Plywood Distributing Co 1500 S Western Ave Chicago
F A Ringwald Co 353 W Madison Chgo
Roberts Sash & Door Co 920 W Cullerton St Chgo 8
Roddis Co. 1440 W Cermak Rd Chgo
Salb Sash & Door 2509 W Cermak Rd Chgo
Geo J Silbernagel 8 S Michigan Ave Chicago
White Pine Sash Co 3612 W 38th St Chgo 32
Frank Veverka Sash & Door Co 59th Av & IC RR Cicero
Alexander Lbr Co Decatur
Valley Mercantile Co Elgin
Building Products Elkville
L. J. Keith & Son Fairfield
Lumber Products Co Glencoe
Wholesale Disttributing Co Moline
Carr & Johnston Peoria
Wahlfeld Mfg Co Peoria
Edward Hines Lbr Co Skokie
Building Materials Wholesale Springfield
James R Fitzpatrick Springfield

INDIANA

Hoosier Sash & Door Co Inc Anderson
Building Products Co Evansville
Evansville Sash & Door Co Evansville
Raymond W Stremming Evansville
Tri-State Wholesale Sash & Door Co Evansville
Indiana Reserve Supply Co Inc Fort Wayne
Goshen Sash & Door Co Goshen
Adams-Rogers Co P O Box 154 Indianapolis
American Plywoods & Millwork Co Indianapolis
Koschnick & Co Indianapolis
Midland Building Industries Inc 907 East Michigan St Indianapolis 6 Ind
Hass Millwork & Bldg Materials Inc South Bend

IOWA

Williams & Hunting Co Cedar Rapids
Curtis Companies Inc Clinton and Sioux City
Loetscher & Burch Mfg Co Des Moines
National Lbr & Shingle Co Des Moines
F I Products Co Fort Dodge
Fort Dodge Wholesale Distributing Co Fort Dodge
Wood Products Co Waterloo

KANSAS

Pacific Mutual Door Co., Kansas City
Curtis Companies Inc Topeka
Rounds & Porter Co Wichita
United Sash & Door Co Wichita

KENTUCKY

Central Kentucky Supply Co Lexington
Byron Sash & Door Co Louisville
Huttig Sash & Door Co Hughes Division Louisville
Louisville Sash & Door Co Louisville
Lumbermen's Wholesale Service Inc Louisville
Welker Sash & Door Co Inc., Louisville
Paducah Sash & Door Co Paducah
Big Sandy Hardware Co Paintsville

LOUISIANA

Davidson Sash & Door Co Inc Alexandria and Lake Charles
Lumber Dealers Supply Co Inc Baton Rouge
Lumbermen's Supply Co Monroe
Edgar P Folse Inc E Main St New Iberia
Bacon Lbr Co Whitney Bldg New Orleans
Cole Mfg Co 1740 Poydras New Orleans
Gulf States Plywood Co 781 La Salle St New Orleans
Madison Lbr Co 721 S Claiborne Av New Orleans
New Orleans Sash & Door Co 2730 Clio St New Orleans
Tulane Hdwd Lumber Co Inc 4200 Tulane Av New Orleans
Allen Millwork Mfg Co St Vincent Av & 63rd Shreveport

MAINE

Turgeon Bros Lewiston
Brockway-Smith-Haigh-Lovell Co Portland
H F Farnham Company Portland

MARYLAND

Harbor Sales Co Inc 1501 S Warner St Baltimore
Dealers Warehouse Supply Co Inc Hillen & Exeter Sts Baltimore
Mears Plywood & Millwork Corp Howard & Ostend Sts Baltimore
Morgan Millwork Co Inc 113 W North Av Baltimore
Pacific Mutual Door Co 1407 Fleet St Baltimore
Radford & Sanders Inc 612 W Pratt Baltimore
Buchanan Lbr Co Cumberland
Dixie Millwork Co Inc Hagerstown
Delmarva Sash & Door Co Inc Sudlersville

MASSACHUSETTS

Brockway-Smith-Haigh-Lovell Co 465 Medford Boston and Lynn
Hawkins Lumber & Warehouse Co Inc 89 State St Boston

Roddis Plywood & Door Co Inc 15 Carleton St Cambridge
New England Panel Co Everett
Richards & Davis Fall River
Hall-Gregg Inc 309 Beacon St Somerville
A W Hasting & Co Inc Somerville
F H Newton Co Inc Somerville
Martin Lumber Co Springfield
Springfield Millwork Co Springfield
Brittain & Cannon Co., Watertown
Kimball Lumber Co Watertown
W H Sawyer Lumber Co Worcester

MICHIGAN

Kneeland-Bigelow Distrib Co Bay City
Smith-Orr Co Dearborn
Continental Screen Co Detroit
Curtis Ros Co 5159 Loraine Av Detroit 8
Dealers Wholesale Supply Co Inc 12871 Eaton Av Detroit
C L Ibsen Co 5437 Hecla Ave Detroit
Kimball & Wilson Inc 2127 Fenkell Av Detroit 3
Patterson Lbr Co Detroit
Pfaff Sash & Door Co 14291 Meyers Rd Detroit
Carl W Scott 12844 Greenfield Ave Detroit
Teachout Sash Door & Glass Co Brandt and Wyoming Sts Detroit 10
Union Lumber Co 7840 Dix Ave Detroit
Wholesale Lbr & Bldg Matls Inc 7500 E Davison Av Detroit
Wolverine Shingle & Lumber Co 14930 Linwood Av Detroit 21
Flint Sash & Door Co Flint 1 and Saginaw
Grand Rapids Sash & Door Co Grand Rapids 8
Porter-Hadley Co Grand Rapids 2
Lumbermen's Credit & Warehouse Co Kalamazoo
Miller Whlse & Warehouse Co Kalamazoo
Grand Rapids Sash & Door Co 1300 Turner St Lansing
Welch Sash & Door Co Port Huron
Royal Oak Wholesale Co 216 E Harrison Royal Oak
Mershon Eddy Parker Co Saginaw
Saginaw Lumber Co Saginaw

MINNESOTA

Radford Co 106 N 46th Av W Duluth
Scott-Graff Co Duluth
E E Bach Millwork Co 3121 Hiawatha Minneapolis
Walter Burfeind Co 100 24th Av N Minneapolis
Carr-Cullen Co 1030 Marshall St Minneapolis
Curtis Companies Inc 1309 SE Fifth Minneapolis
Simons Inc 7th St S & Cedar Av Minneapolis
Donlin-Johnson Co St Cloud
F I Products Co St Paul
Pacific Mutual Door Co 2235 Territorial Rd St Paul
Snell Sash & Door Co 1400 Selby Av St Paul
Buchholz Lbr Co Corner Center & Belleview Sts Winona

MISSISSIPPI

Morgan Wholesale Co Columbia
Hattiesburg Hdwe Stores Inc Hattiesburg
Allen Millwork Mfg Co Jackson
General Wholesale Co Jackson
McGraw-Curran Lbr Co Inc Yazoo City

MISSOURI

Waggener Store Co Festus
Southwestern Sash & Door Co Joplin
American Sash & Door Co Kansas City 1
Dyke Bros 13th St & Mulberry Kansas City and Joplin
Rust Sash & Door Co Kansas City
American Sash & Door Co St Joseph
Fox Bros Mfg Co 2717 Sidney St St Louis
Fry-Fulton Lbr Co 148 Carroll St St Louis
Imse-Schilling Sash & Door Co 4217 Beck St St Louis
St Louis Sash & Door Works 3440 N Broadway St Louis
Steele & Hibbard Lbr Co 3300 N Hall St St Louis
Theling-Lothman Mfg Co St Louis
Central Sash & Door Co Springfield
Southern Supply Co Springfield
Toombs-Fay Co 542 W Phelps St Springfield

MONTANA

W P Fuller Inc Butte and Missoula
Richland Lumber Co Glendive
Building Service Inc Great Falls Mont
Havre Bldrs Supply Co Havre
Interstate Lumber Co Missoula

NEBRASKA

Curtis Companies Inc 645 K St Lincoln
Adams & Kelly 1218 Nicholas St Omaha

NEVADA

Builders Mill Inc Reno

NEW HAMPSHIRE

D'Arcy Co Dover

NEW JERSEY

Pacific Mutual Door Co Garwood
J R Quigley Co Gloucester City
Bosman & Casson Inc Harrison
Engler Millwork Corp Jersey City
Jersey Millwork Corp Jersey City
C R Rudinger Inc Kearney
Black Millwork & Lbr Co Inc Midland Park
Whittier Lbr & Millwork Co 27 Haynes Ave Newark
General Woodcraft Co Inc North Bergen
Reeb Millwork Corp Roselle
Central Jersey Wholesale Supply Co Trenton

NEW MEXICO

Southwestern Sash & Door Co Inc Albuquerque
Santa Fe Bldrs Sup Co Santa Fe

NEW YORK

Concord Lumber Co Inc P O Box 1297 Albany 1
General Millwork Corp 70 Fourth Av Albany
Iroquois Millwork Corp Albany 1
Robbins Millwork Co Inc Albany
White Wholesale Millwork Inc Ardsley N Y
Entenman Millwork Corp 169 Gardner Ave Brooklyn
Gottfried Millwork Co 17 Forrest St Brooklyn
J A Melnick 131 51st St Brooklyn
Parshelsky Bros Inc 131 Morgan Av Brooklyn
Buffalo Plywood Corp 1934 Elmwood Buffalo
Evans Lumber Co Inc 1698 Genessee St Buffalo
Iroquois Door Co Buffalo 10 Syracuse 8
Rock Island Lbr Co—Teachout Co Division 52 Leslie St Buffalo 11
Whitmer-Jackson Co Buffalo 4 and Rochester 3
Marvin Millwork Inc Ellenville
Sturtevant Millwork & Lbr Corp Hicksville
Robbins Door & Sash Co Inc Ithaca
The Blount Lumber Co Oswego County Lacona
Feldman Wood Products Co 23-49 Borden Ave Long Island City N Y
Royal Glass Works Corp 50-20 25th St Long Island City N Y
American Screen Distributors 222nd & 97th Sts NY NY
Baris (J C) Lbr Co 76 Beaver St New York
Becker-Danowitz Co Inc 414 Hooper St NY NY
Empire Millwork Corp Northern Blvd at Willets Pt New York N Y
Glendale Sash & Millwork Corp 71-00 80th St Glendale NY NY
J A Melnick Co Inc 131 51st St New York N Y
Valentine Stortz & Co 136 Liberty St NYC NY
Cameron Lumber Co Inc Newburgh
Hussey-Williams Co Inc 90-15 95th Ave Ozone Park N Y
East Coast Millwork Co Inc Queens Village 8 New York
Wood Glass Co Syracuse
General Millwork Corp Utica 1
The Gibson Door Co Utica 4
Charles C Kellogg & Sons Utica
Leon Octavius Inc 20 Worth St Yonkers

NORTH CAROLINA

North State Material Co Asheville
Atlanta Oak Flooring Co Charlotte
Huttig Sash & Door Co Charlotte
Bingswanger & Co Inc Washington & Macon Sts Greensboro
Barger Millwork Co Statesville
Harris Hdwe Co Washington
Becker Builders Supply 612 Surry St Wilmington
Smith Builders Supply Inc Wilmington

NORTH DAKOTA

Builders Supply Co Bismarck and Fargo
Bardwell-Robinson Co Fargo
Minot Builders Supply Minot and Williston

OHIO

Akron Sash & Door Co Akron 11
Brown-Graves Co 191 E Miller Ave Akron 1
Lumbermen's Wholesale Co Ashland
Interstate Sash & Door Co Canton 4
Mahoney Sash & Door Co 1908 Mahoning Rd NE Canton 5
Tombaugh Lbr Co 215 15th St SE Canton
Acme Sash & Door Co 2nd and John Sts Cincinnati 2
Cincinnati Sash & Door Co 942 W 6th Cincinnati
Queen City Sash & Door Co 45 Race St Cincinnati
Almas Lumber Company Cleveland
Babin Sash & Door Co Cleveland
Carver-Behan Co Cleveland
Great Lakes Sash & Door Co Cleveland 14
Interstate Sash & Door Co 1484 Riverbed Av NW Cleveland 13
Lumbermen's Door & Trim Co 18161 Euclid Av Cleveland 12
Ohio Dealers Wallboard Co 3807 King Ave Cleveland
Rock Island Lumber Co Cleveland
Weller-Wilhelm Lbr Co 1087 W 11th St Cleveland
Whitmer-Jackson Co Cleveland
Huttig Sash & Door Co Columbus
Rae Columbus Inc Columbus
Teachout Sash Door & Glass Co Columbus 15
Throop-Martin Co Columbus 15
Dayton Sash & Door Co Dayton 2
Ohio City Sash & Door Co Dayton
Collier-Barnett Co Toledo 2
Holly Reserve Supply Co 3058 Monroe St Toledo
Smith Allen A Co 1216 W Bancroft St Toledo
Toledo Door & Sash Co Toledo 7

OKLAHOMA

Southern Bldrs Supply Co Ada
Wm Cameron & Co Altus
Lumbermen's Millwork & Supply Co Ardmore
L C Morgan Sash & Door Co Lawton
T H Rogers Lumber Co McAlester
Dyke Brothers Oklahoma City
Kilpatrick Bros Inc Oklahoma City
Long-Bell Lbr Co Oklahoma City
Lumber Mill Sales Co Oklahoma City
Morgan Sash & Door Co Oklahoma City
Neal Millwork & Supply Co Oklahoma City
Oklahoma Sash and Door Co Oklahoma City
Rounds & Porter Co Altus Oklahoma City and Tulsa
General Sash & Door Co Tulsa

OREGON

Western Door & Plywood Corp Albany
Vollstedt-Kerr Lbr Co McMinnville
W P Fuller & Co Inc Portland
Gilbert Hawley Co Portland
J H Lausmann Co Portland
Lumber Products Inc Portland
Western Door & Plywood Co Lumbermen's Bldg Portland

PENNSYLVANIA

Buchanan Lbr Co Altoona
Reeb Millwork Corp Bethlehem
Soult Lbr Co Clearfield
J R Quigley Co Inc Cressona
Lyman Felheim Co Erie
Delmarva Sash & Door Co Inc Lancaster
W C Ashenfelter & Son Inc Philadelphia

Wm H Derr Co Philadelphia
Lumico Sales Co 927 N Front St Philadelphia
Adelman Lumber Co Pittsburgh 19
Commercial Sash & Door Co Pittsburgh 1
Iron City Sash & Door Co Pittsburgh 3
N B Epstein Company Scranton 9
Robbins Door & Sash Co Scranton Shenandoah and Williamsport

RHODE ISLAND

H A Grimwood Providence

SOUTH CAROLINA

W S Robinson Chester
Dealers Supply Co Greenville
Southern Sash & Door Co Greenville
Palmetto Sash & Door Co 30 Seaboard Ave Orangeburg

SOUTH DAKOTA

Dakota Sash & Door Co Aberdeen
Farley-Loetscher Co Sioux Falls
Kehm Builders Supply Co Sioux Falls
Watertown Sash & Door Co Watertown

TENNESSEE

Scheidegger Woodwork Supply Co Chattanooga
Summers Hdwe & Supply Co Johnson City
Chandler & Co Inc Knoxville
House-Hassen Hdwe Co Inc Knoxville
Huttig Sash & Door Co Knoxville
C M McClung & Co Inc Knoxville
Central Woodwork Inc P O Box 2852 Memphis
Cole Mfg Co Memphis
Dyke Brothers Memphis
Fischer Lime & Cement Co Memphis
Memphis Sash & Door Co Memphis
Beasley & Sons Co Nashville
J E Chilton Millwork & Lbr Co Nashville
Nashville Sash & Door Co Nashville
Warren Brothers Co Nashville

TEXAS

Wm Cameron & Co Inc Abilene Austin Beaumont Corpus Christi Fort Worth Harlingen Houston Lubbock Lufkin Odessa San Angelo San Antonio Tyler Waco and Wichita Falls
Amarillo Sash & Door Co Amarillo
Lamb Sash & Door Co Amarillo
United Sash & Door Co Amarillo
Davidson Sash & Door Co Austin
Steves Sash & Door Co Corpus Christi
Buell Lbr & Mfg Co Dallas
Clem Lbr Co Dallas
Huttig Sash & Door Co of Texas Dallas
Lyon-Gray Lumber Co Dallas
Moore & Company Dallas
Crawford Mfg Co El Paso
Galbraith Steel & Supply Co El Paso Lubbock Pecos
Southwestern Sash & Door Co Inc El Paso
Ft Worth Sash & Door Co 400 S Lake St Ft Worth
H H Hardin Sash & Door Co Fort Worth
Sloan Lbr Co 205 W Vickrey Blvd Ft Worth
Texas Sash & Door Co Fort Worth
Southmost Sash & Door Co Harlingen
Detering Company Houston
Dyke Brothers Houston
Houston Sash & Door Co Houston
Steves Sash & Door Co Houston and San Antonio
Geo C Vaughan & Sons Houston and San Antonio
Galbraith Steel & Supply Co Lubbock Marfa Pecos
Lubbock Sash & Door Co Lubbock
Lyon-Gray Lbr Co Paris
Grayson Millwork & Supply Co Sherman
Sweetwater Sash & Door Co Sweetwater
C D Shamburger Jr Supply Co Wichita Falls

VIRGINIA

Building Supplies Corp Norfolk
Binswanger & Co Inc 304 S 6th St Richmond
Sash Door & Glass Corp Richmond
Huttig Sash & Door Co Roanoke
Rocky Mount Mfg Co Inc Rockymount
Holland & Beaman Co Suffolk

WASHINGTON

Savage Lbr & Mfg Co Renton
W P Fuller & Co Seattle Spokane Tacoma Walla Walla & Yakima
F. L. Hartung Co Seattle and Spokane
Puget Supply Co Seattle 11
Johnson & Lundgren Tacoma
Pacific Mutual Door Co Tacoma
Tacoma Sash & Door Co Tacoma

WEST VIRGINIA

Bluefield Sash & Door Co Bluefield
Carolina Lumber Co Huntington
Foster-Thornburg Hdwe Co Huntington
W H Smith Hardware Co Parkersburg
Martin & Jones Inc Ronceverte
W A Wilson & Sons Inc Wheeling

WISCONSIN

Moore & Galloway Lbr Co Fond du Lac
Wisco Hardware Co 15 S Brearly St Madison
Burmeister Woodwork Co Milwaukee
Marquart Millwork Co Oshkosh
Morgan Co of Wisconsin Oshkosh
Radford Co 40 Wisconsin Ave Oshkosh
Racine Millwork & Supply Co Racine
Ellingers Supply Inc Sheboygan
Wilbur Lbr Co Waukesha
Curtis Companies Inc Wausau
Wilbur Lbr Co West Allis

Wholesalers of Building Materials

ALABAMA

Birmingham Sash & Door Co Birmingham
Tenser Lumber Co P O Box 579 Mobile 18
Underwood Coal & Supply Co Mobile

ARIZONA

Galbraith Steel & Supply Co Phoenix
O'Malley Lumber Co Phoenix
Southwestern Sash & Door Co Inc Phoenix and Tucson

ARKANSAS

Dyke Bros Fort Smith North Little
Arkmo Lbr Co North Little Rock and Texarkana
Wm Cameron & Co Inc Texarkana

CALIFORNIA

Perry E Canfield Burbank
Mathews & De Haven Inc Fresno
Accepted Materials Co Los Angeles
R J M Co Los Angeles
Downes & Spelman 2309 Adeline St Oakland
Special Materials 3330 E 12th St Oakland
Wholesale Bldg Supply Inc Oakland
Reserve Warehouse Inc Oceanside
Lumbermen's Supply Inc P O Box 150 Sacramento
Golden State Flooring Co 375 Rhode Island St San Francisco
Pacific Coast Aggregates Inc San Francisco
Western Bldrs Supply Co San Francisco
Harrison Wholesale Co Santa Barbara
Building Matl Distributors Stockton

COLORADO

Building Products Jobbers Inc Denver 16
Denver Reserve Supply Co Denver
Hallack & Howard Lbr Co 7th & Larimer Sts Denver
Lumber Dealers Inc Denver and Pueblo
Sterling Lbr & Investment Co Denver

FLORIDA

Gate City Sash & Door Co Ft Lauderdale and Miami
Stringfellow Supply Co Gainesville
Dania Lbr & Supply Co Hollywood and Miami
Calvit Howell & Co Jacksonville
Henderson-Fouraker Lbr Co Jacksonville
Bailey's Lbr Yard Inc Miami
Lindsley Lbr Corp P O Box 774 Sta 5 Miami
Booker & Dickson Inc Tampa
Knight & Wall Co Tampa
Logan Lbr Co Tampa

IDAHO

Atkinson Reilly Co Inc Boise
Continental Lumber Co Boise
Idaho Supplies Inc Grangeville Lewiston and Moscow
Morrison-Merrill & Co Inc Pocatello

ILLINOIS

Alexander Warehouse & Sales Co 20 W Jackson Blvd Chicago; also Aurora Joliet and Urbana
Chicago & Riverdale Lbr Co 341 E 136 Pl Chgo
General Roofing & Supply Co 5918 S Ashland Ave Chicago
Edward Hines Lbr Co 77 W Washington St Chgo and Skokie
W E Olsen Co 228 N LaSalle St Chicago
Reserve Supply Corp of Chicago 1529 S Jefferson Chicago
East Side Lumberyard Supply Co East St Louis
Valley Mercantile Co Elgin
Building Products Elkville
Southern Wholesale Lbr Co Fairfield
Building Supply Co Granite City
Lumber Dealers Supply Co Libertyville
Rock Island Warehouse Sales Co Rock Island
State Line Builders Supply Co South Beloit
B H M Building Matls Inc 1528 N 11th St Springfield
Builders Supply Co 216 N 7th St Springfield
Building Materials Wholesale Springfield
Rinkenberger Co Washington
Washington Supply Co Washington

INDIANA

Building Products Co Inc Evansville
Indiana Wholesalers Inc Evansville
Raymond W Stremming Evansville
Curdes Lumber Co Inc Fort Wayne
Great Lakes Distributing Co Ft Wayne and South Bend
Indiana Reserve Supply Co Ft Wayne
Michigan Wholesalers, Inc Fort Wayne
Carter-Lee Lbr. Co Indianapolis
General Sales Co 434 Merchants Bank Bldg Indianapolis
Indianapolis Plywood Co 1300 Beecher St Indianapolis
Lumberman's Wholesale Supply Co Indianapolis
Midland Building Industries Inc 907 East Michigan St Indianapolis 6 Ind
Eagle Lbr Dealer Supply Co 1450 N Washington St Marion
Hass Wholesale Inc 3922 W Sample St South Bend
Wabash Valley Lbr. & Supply Co Inc Terre Haute

IOWA

Lumbermen's Associated Buyers Co Inc Cedar Rapids and Des Moines
Tip-Top Distributing Co Cedar Rapids Des Moines and Storm Lake
Williams & Hunting Co Cedar Rapids
Joyce Lbr & Supply Co Council Bluffs
Ashton Wholesale Service 107 3rd St Des Moines
Loetscher & Burch Mfg Co Des Moines
Queal Distributing Co 224 E Grand Ave Des Moines
F I Products Co Fort Dodge
Ft Dodge Wholesale Distributing Co Ft Dodge
Thos Mould Lbr Co Sioux City
Perry E Canfield Waterloo
Waterloo Roofing & Supply Co Waterloo
Wood Products Co Waterloo

KANSAS

L J White Lbr Co Hutchinson
Badger Lbr Co Kansas City
Lumber Dealers Service Co Kansas City
W P Stark Lumber Co Inc Airfax Rd & Quindaro Kansas City
T F Martin Lbr Co Topeka
Rock Island Warehouse Sales Co Wichita
Wichita Bldg Material Co Wichita

KENTUCKY

Central Kentucky Supply Co Lexington
Lumbermen's Wholesale Service Inc Louisville
Mutual Service Co Inc Louisville

LOUISIANA

Lumber Dealers Supply Co Inc Baton Rouge
Madison Lumber Co New Orleans
Central Wholesale Co Inc Shreveport

MASSACHUSETTS

Elhide Co Cambridge
Connecticut Valley Reserve Supply Co Springfield
Diamond Match Co Springfield

MICHIGAN

Baker Wholesale Co Battle Creek
Kneeland-Bigelow Distributing Co Bay City
Central Bldrs Supplies Co Burr Oak
Cadillac Wholesale Supply Cadillac
Hansen Wholesale Lbr Corp Dearborn
Dealers Wholesale Supply Inc Detroit
Lumbermen's Wholesale Supply Co Detroit
Varco Distributors Inc 9940 Roselawn Ave Detroit
Wholesale Lbr & Bldg Materials Inc Detroit
Flint Sash & Door Co Inc Flint
Evans & Retting Lbr Co Grand Rapids
Fir-Tex of Michigan Grand Rapids
Grand Rapids Reserve Supply Co Grand Rapids
Porter-Hadley Co Grand Rapids
Western Michigan Bldg Material & Supply Co Grand Rapids
Hamar-Quandt Co Houghton
Consolidated Fuel & Lumber Co Ishpeming
Hartwick-Woodfield Co Jackson
Michigan Wholesalers Inc Jackson
Miller Wholesale & Warehouse Co Kalamazoo
Wholesale Lbr Products Co Muskegon
Saginaw Lbr Co Saginaw

MINNESOTA

Woodruff Lbr Co 817 Garfield Ave Duluth
Northwest Supplies Co 1200 Central Ave Minneapolis
F I Products Co St Paul
Reserve Supply Co St Paul
Rock Island Warehouse Sales Co 1st Nat Bk Bldg St Paul

MISSISSIPPI

Delta Bldg Matl Co Leland

MISSOURI

Cape Supply Co 14 S Frederick St Cape Girardeau
Four States Supply Co Carthage
J C Williamson Dexter
Waggener Store Co Festus
Missouri Lumber Dealers Reserve Inc Jefferson City
Southwestern Sash & Door Co Joplin
Badger Lumber Co Inc Kansas City
Dyke Bros Joplin and Kansas City
Lumbermen's Supply Co Kansas City and St Joseph
Stark & Co Kansas City
Lebanon Wholesale Materials Co Lebanon
Saint Joseph Bldrs Supply Co St Joseph
Dealers Service & Supply Co 8442 St Charles Rock Road St Louis 14
Lumberyard Supply Co St Louis
Toombs & Co Springfield

MONTANA

Western Builders Supply Inc P O Box 1243 Billings
Havre Bldrs Supply Havre

NEBRASKA

Byers Lumber Co Hastings
Central Lbr Sales Co Lincoln
Chicago Lumber Co of Omaha Omaha
Joyce Lumber & Supply Co Omaha
Lumbermen's Brick & Supply Co Omaha

NEVADA

Flanigan Warehouse Co Reno

NEW HAMPSHIRE

Diamond Match Co Dover

NEW JERSEY

Fir-Tex of New Jersey Inc Orange

NEW MEXICO

New Mexico Co P O Box 895 Albuquerque
Southwestern Sash & Door Co Inc Albuquerque
Santa Fe Bldrs Sup Co Santa Fe

NEW YORK

Concord Lumber Co Inc P O Box 1297 Albany 1
Wholesale Service Supply Corp Albany Utica
Mansfield Construction Co 233-02 Merrick Road Rosedale 10 Long Island N Y
Diamond Match Co 30 Church St NYC
Harry R Austin Lbr Co Ouaquaga

NORTH CAROLINA

North State Material Co Asheville
Smith Bldrs Supply Inc Wilmington

NORTH DAKOTA

Builders Supply Co Bismarck
Minot Bldrs Supply Co Minot
Minot Builders Supply Co Williston

OHIO

Lumbermen's Wholesale Co Ashland
Ashtabula County Wholesale Lbr Co Ashtabula
Athens Flooring Co Athens
Industrial Wholesale Lbr Co Cleveland
Rae Columbus Inc Columbus
Michigan Wholesalers Inc Toledo
Rae Bldg Matls Toledo
Reserve Supply Co Warren
Union Wholesale Lbr Co Youngstown

OKLAHOMA

Wm Cameron & Co Inc Altus
Lumber Mills Sales Co Oklahoma City
Lumbermens Supply Co Oklahoma City
Neal Millwork & Supply Co Oklahoma City

OREGON

City Lbr & Supply Co Astoria
Shockley Lbr Co Baker
Twin Oaks Bldrs Supply Co Eugene
Bevil & Co 80 SE Madison St Portland
Casey (Don) Co 207 SE Clay St Portland
Gilbert Hawley Co Portland
Howard Teel 4621 NE 12th Ave Portland
Lamb-Schrader Co Tillamook

PENNSYLVANIA

Soult Lbr Co Clearfield Pa
M L Claster & Sons Lock Haven
Philadelphia Reserve Supply Co Philadelphia
Stirling Lbr 500 Brushton Ave Pittsburgh

SOUTH CAROLINA

Piedmont Wholesale Co Greenville

SOUTH DAKOTA

Jordan Millwork Co Sioux Falls
Lumbermen's Supply Co 617 E 7th Sioux Falls

TENNESSEE

Bristol Builders Supply Co Bristol
Dyke Bros 91 W Virginia Ave Memphis
Dealers Supply Co Nashville

TEXAS

Wm Cameron & Co Inc Abilene Austin Beaumont Corpus Christi Fort Worth Harlingen Houston Lubbock Lufkin Odessa San Angelo San Antonio Tyler Waco and Wichita Falls
Buell Lumber & Mfg Co Dallas
Huttig Sash & Door Co of Texas Dallas
Lyon-Gray Lbr Co Dallas and Paris
Galbraith Steel & Supply Co El Paso Lubbock Marfa Pecos
Southwestern Sash & Door Co Inc El Paso
G C Cooley Wholesale Lbr & Bldg Matl Fort Worth
Dyke Bros Houston
Geo C Vaughan & Sons Houston Nederland and San Antonio
Gulf State Lbr Co Tyler
Nash Robinson & Co Inc Waco
C D Shamburger Jr Supply Co Witchita Falls

UTAH

R W Frank & Co Inc Salt Lake City
Lumber Dealers Supply Salt Lake City
Morrison-Merrill & Co Inc Salt Lake City

VIRGINIA

Mingo Lime & Lbr Co Grundy

WASHINGTON

Stouffer-Bowman Co Aberdeen
Dealers Warehouse Inc 5202 15th Ave NW Seattle
Palmer G Lewis Co 14 Hanford St Seattle
Lockwood Warehouse Corp 2823 Western Ave Seattle
Lumber Supply & Warehouse Co 535 Elliott Ave W Seattle
Puget Supply Co P O Box 1844 Seattle 11 Wash
Building Supplies Inc Spokane
Exchange Lbr & Mfg Co Spokane
F L Hartung Co Seattle and Spokane
Idaho Supplies Inc Spokane
Lumbermen's Supply Co W 228 Pacific Ave Spokane
Lungren Dealers Supply Inc 440 E 25th St Tacoma

WEST VIRGINIA

Hartland Planing Mill Co Clarksburg
H L Seabright Co Wheeling
W A Wilson & Sons Co Wheeling
Mingo Lime & Lbr Co Williamson

WISCONSIN

Lumber Dealers Supply Inc Green Bay
Wisconsin Wholesalers Inc 1200 Velp Ave Green Bay
Lumbermen's Supply Co 210 S Baldwin St Madison
Ellingers Supply Co Inc Sheboygan
Falls Dealer Supply Co Sheboygan Falls Wis

Building Products and Equipment Directory

THIS classified list of products, equipment and services used in and by the lumber and building materials industry contains the names of most of the manufacturers and service organizations. For the dealer seeking to expand his lines of merchandise the list should prove helpful.

The directory is presented in streamline style without cross references on the assumption that readers are familiar enough with the use of classified listings to provide their own cross references in those cases where there is reasonable doubt as to the heading under which a particular product or service should be listed. Choice of either the noun or the descriptive adjective as the governing word in determining the classification was made in each case on the basis of which is the dominating word in the opinion of the directory editors.

All product listings are alphabetical except for lumber which will be found in a special section immediately following the other classifications. In this section the types of lumber normally sold by each company are indicated by appropriate symbols.

The directory has been made as complete as possible. When writing to manufacturers listed herein please mention American Lumberman & Building Products Merchandiser.

ABRASIVES—coated

Abrasive Prod Inc So Braintree Mass
Armour & Co 1355 W 31st St Chgo 9 Ill
Behr-Manning Corp Troy N Y
Carborundum Co Niagara Falls N Y
Clover Mfg Co Norwalk Conn
Mid-West Abrasive Co 500 S Washington St Owosso Mich
Minnesota Mining & Mfg Co St Paul 6 Minn
Red Devil Tools Irvington 11 N J p.10
Sandpaper Inc Rockland Mass

ACOUSTICAL MATERIALS

Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Celotex Corp 120 S LaSalle Chgo Ill p.297, 329, 369, 439
Hawaiian Cane Products Inc Culver City Calif
Insulite Div Minnesota and Ontario Paper Co Dept AL-49 Baker Arcade Bldg Minneapolis 2 Minn p.285
Johns-Manville Sales Corp Box 290 22 E 40th New York 16 N Y p.280, 301, 347, 375
Lockport Cotton Batting Co Lockport N Y p.376-377
National Gypsum Co Buffalo 2 N Y p.298-299
Pacific Lumber Co 100 Bush San Francisco Cal
Sealcon Products Inc Minneapolis 2 Minn
United States Gypsum Co 300 W Adams Chgo 6 Ill p.293
Zonolite Company Dept ALM-49 135 S La Salle St Chgo 3 Ill p.363

ADHESIVES

Abesto Mfg Corp Dept D-3 Michigan City Ind p.354
American Varnish Co 1120-1140 N No Branch St Chicago 22 Ill p.205
Armour & Co 1355 W 31st St Chgo 9 Ill
The Borden Co Chemical Div 350 Madison Av New York N Y
E L Bruce Co Memphis Tenn p.307
Celadri Corp 652 Willis Av Williston Pk N Y
Christy Co Inc St Louis 10 Mo
The Commercial Paste Co Buttles at Michigan Columbus 8 Ohio
Consumers Glue Co St Louis Mo
Firestone Industrial Products Co Pottstown Pa p.231
H B Fuller Co 255 Engle St St Paul 2 Minn
Higgins Inc New Orleans La p.317
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Le Page's Inc Gloucester Mass
Madison Glue Corp 53 Park Pl N Y 7 N Y
Marsh Wall Products Inc 441 Main St Dover O p.283
The Mengel Co Inc Louisville 1 Ky p.13, 181
Minnesota Mining & Mfg Co St Paul 6 Minn
Miracle Adhesives Corp 801 2nd Av N Y 17 N Y
Mixtite Corp North Haven Conn
Monite Waterproof Glue Co 1628 2nd St N Minneapolis 11 Minn
National Adhesives 270 Madison Av New York 16 N Y
National Casein Sales 601 W 80th Chgo 20 Ill
Paisley Prod Inc 1770 Canalport Av Chgo 16 Ill
Patent Cereals Co Geneva N Y
Perkins Glue Co Lansdale Pa
Placo Div Paisley Products Inc 718 Washington Ave North Minneapolis Minn
Reliable Paste Co 3560 Shields Av Chicago Ill
The Resinous Products & Chemical Co Philadelphia 5 Pa
Superior Wall Products Co 4413 N American St Philadelphia 40 Pa p.300
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
U S Plywood Corp 55 W 44th N Y 18 N Y p.13, 181, 220, 257
Webb Products Co San Bernardino Calif & Norcross Ga
W F Webster Cement Co 224 Thorndike St Cambridge 41 Mass
Williamson Adhesives Inc 2327 W 18th St Chgo 8 Ill

ADJUSTERS—screen & sash

Casement Hdw Co 406 N Wood St Chgo Ill
P & F Corbin Park St New Britain Conn
H B Ives Co New Haven 8 Conn
F D Kees Mfg Co Beatrice Neb
Nat'l Brass Co Grand Rapids Mich
Norwalk Lock Co 395 Broadway NY 13 NY
Russell & Erwin Div The American Hardware Corp New Britain Conn p.241
Sargent & Co P O Box 1940 New Haven 9 Conn
Standard Bronze Co Bayonne 8 N J p.255
Sterling Hdw Mfg Co 2341 W Nelson Chgo Ill
Wright Products Co St Paul Park Minn

ADVERTISING SERVICES

Local Trademarks Inc 87 Madison St NY 16 NY p.492
Norm Advertising Inc 79 Madison Av NY 16 NY p.496-497
Worldwide Syndicate 403 S Akard Dallas Tex

ADVERTISING SPECIALTIES

American Emblem Co Utica N Y
American Rule & Block Co Menominee Mich
Chicago Wood & Plastic Products 4201 W Irving Park Chgo Ill
Economy Novelty & Printing Co 225 W 39th St New York 18 N Y
General Wood Works Council Bluffs Ia
L F Grammes & Sons Inc Allentown Pa
Lufkin Rule Co Saginaw Mich
The Thos D Murphy Co Red Oak Iowa
Parisian Novelty Co 3510 Western Av Chicago 9 Ill
Reflector Hdwe Corp Western Av & 22nd Pl Chgo Ill
Tiffin Art Metal Co Tiffin 16 Ohio

AIR COMPRESSORS

Allis-Chalmers Mfg Co Milwaukee 1 Wis p.484
Binks Mfg Co 3124 W Carroll Av Chgo Ill
Davey Compressor Co Kent O
The DeVilbiss Company 300 Phillips Av Toledo 1 Ohio
Gardner Denver Co Quincy Ill
Ingersoll-Rand Co 11 Broadway New York 4 N Y
Novo Engine Co Lansing 5 Mich
Paasche Airbrush Co 1909 W Diversey Chgo Ill
Worthington Pump & Mchry Corp Harrison N J

AIR CONDITIONING UNITS

Carrier Corp Syracuse 1 N Y
Chrysler Corp Airtemp Div Dayton 1 O
Connecticut Blower Co Hartford 1 Conn
Frick Co Dept 75 Waynesboro Pa p.491
Frigidaire Div Gen'l Motors Sales Corp Dayton O
General Electric Co Schenectady 5 N Y
Kelvinator Div Nash Kelvinator Corp Detroit Mich
McQuay Inc Minneapolis 13 Minn
Modine Mfg Co Racine Wis
Norge Div Borg Warner Corp 672 Woodbridge St Detroit 26 Mich
Penn Boiler & Burner Mfg Corp Box 1079 Lancaster Pa
Round Oak Co Dowagiac Mich
Surface Combustion Corp Toledo 1 Ohio
Waterman-Waterbury Co 1121 Jackson St NE Minneapolis 13 Minn
Westinghouse Electric Corp Sturtevant Div Hyde Park Boston 36 Mass
Williams Oil-O-Matic Div Eureka Williams Corp Bloomington Ill

ANCHORS—building

Ackerman-Johnson Co 625 W Jackson Blvd Chgo 6 Ill
Arro Expansion Bolt Co Box 388 Marion O
Chicago Expansion Bolt Co 1338 W Concord Place Chicago 22 Ill
Cincinnati Iron Fence Co Inc 2110 Florence Av Cincinnati 6 Ohio
The Davis & Siehl Co Cincinnati 23 O
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Ideal Hanger Co 1290 E 53rd Cleveland 14 Ohio p.135
Merwin Mfg Co Erie Pa
Rawlplug Co Inc 271 Church St New York 13 NY
Rockford Bolt & Steel Co 126 Mill St Rockford Ill
Sommer Metalcraft Corp Crawfordsville Ind
Southern Wire & Iron Works 441 Memorial Dr SE Atlanta Ga

Number after listing indicates page on which advertisement appears

Star Expansion Products Co Inc 147 Cedar St N Y 6 N Y
Sterling Foundry Co Inc Sterling Ill
Wilcox Crittenden & Co Inc Middletown Conn

ANCHORS—concrete

Chicago Expansion Bolt Co 1338 W Concord Place Chicago 22 Ill
The Davis & Siehl Co Cincinnati 23 O
Laclede Steel Co Arcade Bldg St. Louis 1 Mo
Paine Co 2951 Carroll Av Chicago 12 Ill
Richmond Screw Anchor Co Inc 816 Liberty Av Brooklyn 8 N Y
St Paul Corrugating Co St Paul 1 Minn
Sommer Metalcraft Corp Crawfordsville Ind.
Southern Wire & Iron Works 441 Memorial Dr SE Atlanta Ga
Williams Form Engineering Corp Grand Rapids 7 Mich

ANVILS—saw setting

Hanchett Mfg Co Big Rapids Mich
Western Foundry Co 2400 S W Water Av Portland 1 Ore

APPRAISERS & ESTIMATORS—industrial

American Appraisal Co Milwaukee Wis
General Appraisal Co Seattle 4 Wash
Industrial Appraisal Co Memphis Tenn
James D Lacey Co 231 S LaSalle Chgo 4 Ill
Mississippi Valley Appraisal Co 220 N 4th St St Louis 2 Mo
Southwestern Appraisal Co 4 W 13th St Kansas City 6 Mo
Standard Appraisal Co 6 Church New York 6 N Y

APRONS—carpenter, clothespin etc.

Bemis Bro Bag Co 408 Pine St St Louis 2 Mo
Canvas Specialty Co PO Box 937 Hartford Conn
Clifton Mfg Co PO Drawer 2029 Waco Tex
Economy Novelty & Printing Co 225 W 39th N Y 18 N Y
Fulton Bag & Cotton Mills Atlanta Ga
Minnesota Specialty Co 119 N 4th St Minneapolis 1 Minn
Standard Awning Co 83 Avon St Hartford 5 Conn
Troy Sunshade Co Troy O

ARCHES—wood, laminated

Rilco Laminated Products Inc 2680 First Natl Bank Bldg St Paul 1 Minn p.38
Super-Structures Inc Albert Lea Minn
Unit Structures Inc Peshtigo Wis

AREA WALLS—steel

The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105
Majestic Co 103 Erie St Huntington Ind p.90
St Paul Corrugating Co St Paul 1 Minn
Wheeling Corrugating Co Wheeling W Va p.441

ASH DUMPS

Adams Co Dubuque Iowa
Allen Steel Products 12911 Hillview Detroit 27 Mich
Bennett-Ireland 449 Pine St Norwich N Y p.386
Copco Steel & Engineering Co 14035 Grand River Av Detroit 27 Mich
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Heatilator Inc 313 E Brighton Av Syracuse N Y p.383
Industrial Iron Works 6011 S W Macadam Portland 1 Ore
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105
Majestic Co 103 Erie St Huntington Ind p.90
Superior Fireplace Co 1709-D East 15th St Los Angeles 21 Cal & 601-X North Point Road Baltimore 6 Md p.385

AWNINGS & CANOPIES

Aluminum Awning Co Div of Orchard Bros Inc Rutherford N J
American Tent & Awning Co 1132 Mission San Francisco Calif
The Andal Mfg Co 140 Ash St Akron 8 Ohio
The Astrup Co 2937 W 25th St Cleveland 13 Ohio
Clifton Mfg Co PO Drawer 2029 Waco Tex
Fulton Bag & Cotton Mills Atlanta Ga
W E Hettrick & Son Co PO Box 377 Toledo 1 Ohio
Indestructo Awning Co 54 W Grand Av Chgo Ill
Tucker Duck & Rubber Co Fort Smith Ark
United Metal Products Inc Akron 11 Ohio
United Tent & Awning Co 759 N Spring Los Angeles Calif

BAGS—canvas, all kinds

Canvas Specialty Co PO Box 937 Hartford Conn

BALING PRESSES

American Mfg Co Inc 2119 Pacific Av Tacoma 2 Wash
Economy Baler Co Ann Arbor Mich
Famous Mfg Co East Chicago Ind
Lewis T Kline Co Alpena Mich (excelsior)

BALUSTERS—metal

Adams Co Dubuque Iowa
J G Braun Co 615 S Paulina St Chicago 12 Ill
The Davis & Siehl Co Cincinnati 23 O
Logan Co Inc Louisville 6 Ky
Metal Crafters Division Castone Products Co Cedar Rapids Iowa p.110

BALUSTERS—wood

Carr Adams & Collier Co Dubuque Ia p.147
Crossett Lbr Co Crossett Ark
Farley & Loetscher Mfg Co Dubuque Iowa
Fordyce Lbr Co Fordyce Ark p.313
Frost Lumber Industries Inc Shreveport 90 La
Morgan Co Oshkosh Wis
Willamette Valley Lumber Co Dallas Oregon

BARBECUE EQUIPMENT & PARTS

Champion Blower & Forge Co Lancaster Pa
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Industrial Iron Works 6011 S W Macadam Av Portland 1 Ore
Majestic Co 103 Erie St Huntington Ind p.90
Allen Selby Assoc 1836 Chase Av Chgo Ill

BARN EQUIPMENT—farm

Badger Corrugating Co La Crosse Wis
Berg Equip Corp Marshfield Wis
Franklin Equipment Co Monticello Iowa
H D Hudson Mfg Co Dept D-16 589 E Illinois Chgo 11 Ill
James Mfg Co Fort Atkinson Wis
Louden Mach Co Fairfield Ia
Mitchell Mfg Co Milwaukee 7 Wis
The Ney Mfg Co 948 High Av S W Canton 4 Ohio
Olson Mfg Co Albert Lea Minn
Starline Inc Harvard Ill
Jonas A Swenson Co Springfield So Dak
Wagner Mfg Co Cedar Falls Ia

BASKETS—wire trash burning

Cyclone Fence Div American Steel & Wire Co U S Steel Corp Sub Box 260 Waukegan 1 Ill
Hall Enterprises Casco Wis
Majestic Co 103 Erie St Huntington Ind p.90
Wheeling Corrugating Co Wheeling W Va p.441

BATHROOM ACCESSORIES

The Autovre Co Oakville Conn
General Wood Works Council Bluffs Ia
Gerity-Michigan Die Casting Co Adrian Mich
F H Lawson Co 809 Evans St Cincinnati 4 Ohio
Marsh Wall Products Inc 441 Main St Dover Ohio p.283
Miami Cabinet Div Philip Carey Mfg Co Middletown O
Chas Parker Co Meriden Conn
S Parker Hdwe Mfg Corp 27 Ludlow St N Y 2 N Y
Shower Door Co of America 973 Peachtree St NE Atlanta 5 Ga
E C Smith Mfg Corp 1515 N Artesian Chgo 22 Ill
Superior Plastics Div Commonwealth Plastics Inc 426 N Oakley Blvd Chicago 12 Ill
Tiletone Co 2323 Wayne Av Chgo 14 Ill
Turner & Seymour Mfg Co Torrington Conn p.161
Tylac Co Monticello Ill

BATTERIES—farm lighting

Delco Appliance Div Gen'l Motor Sales Corp Rochester N Y
Fairbanks Morse & Co 600 S Michigan Av Chgo Ill
Universal Batt Co 3410 S La Salle Chgo Ill

BEDS—disappearing

Evansville Metal Bed Co Evansville Ind
Holmes Mfg Co 211 N Madison Ave Los Angeles 4 Cal
Murphy Door Bed Co 30 N LaSalle Chgo 2 Ill
Roll-A-Way Corp 2954 N Sheffield Av Chicago 14 Ill
Superior Sleeprite Corp 2219 S Halsted Chgo Ill

BELT LACING EQUIPMENT

Chicago Belting Co 121 N Green St Chgo 7 Ill
Clipper Belt Lacer Co Grand Rapids 1 Mich
Flexible Steel Lacing Co 4607 Lexington Chgo 44 Ill
Chas A Schieren Co 30 Ferry St New York 7 N Y

BELTING—conveyor

Acme Rubber Mfg Co Trenton N J
Boston Woven Hose & Rubber Co Cambridge Mass
Broadway Rubber Mfg Co Louisville Ky
The Cincinnati Rubber Mfg Co 4900 Franklin Av Cincinnati 12 Ohio
The B F Goodrich Co Akron Ohio
Link-Belt Co 300 W Pershing Rd Chgo 9 Ill
New York Rubber Corp Empire State Bldg New York 1 N Y
Raybestos-Manhattan Inc Passaic N J
Teuscher Pulley & Belting Co 801 N 2nd St St Louis 2 Mo
Thermoid Co Trenton N J
United States Rubber Co 1230 6th Av New York 20 N Y
Webb Belting Co 1501 W 12th St Kansas City 7 Mo

BELTING—transmission

Chicago Belting Co 121 N Green Chgo 7 Ill
Victor R Clark Belting Co 605 W Washington Blvd Chgo 6 Ill
The Dayton Rubber Co 2342 W Riverview Av Dayton 1 Ohio
Gates Rubber Co 999 S Broadway Denver 17 Colo
Graton & Knight Co Worcester 4 Mass
Edw R Ladew Co 128 Lafayette NY NY
Page Belting Co Concord N H
Raybestos-Manhattan Inc Passaic N J.
J E Rhoads & Son 35 N 6th Philadelphia 6 Pa
Chas A Schieren Co 30-38 Ferry NY 7 NY
Teuscher Pulley & Belting Co 801 N Second St St Louis 2 Mo
Thermoid Co Trenton N J
Webb Belting Co 1501 W 12th St Kansas City 7 Mo

BELTING DRESSING & CEMENT

Cling-Surface Co 1032 Niagara St Buffalo 13 N Y (dressing only)
Jos Dixon Crucible Co Jersey City 3 N J
Ensign Products Co Cleveland 5 Ohio
The B F Goodrich Co Akron Ohio
J E Rhoads & Son 35 N 6th Philadelphia 6 Pa

Number after listing indicates page on which advertisement appears

Richmond Belt Dressing Mfg Co Inc PO Box 5087 Richmond 20 Va (dressing only)
Chas A Schieren Co 30-38 Ferry NY 7 NY
The Sullivan Co P O Box 2606 Memphis 2 Tenn
Warren Belting Co Inc 33 Arctic St Worcester 8 Mass
Webb Products Co San Bernardino Calif & Norcross Ga

BIN SWINGS

Ritsche Specialty Mfg Co St Cloud Minn

BINS—grain

Brainard Steel Co Warren 3 Ohio p.95
W E Caldwell Co Louisville 8 Ky
Dempster Mill Mfg Co Beatrice Neb
Edwards Mfg Co 427 Culvert St Cincinnati 2 Ohio
Illinois Wire & Mfg Co PO Box 1396 Joliet Ill p.399, 402
Kalamazoo Tank & Silo Co Kalamazoo Mich
Midwest Steel Products Co Kansas City Mo (steel)
Richmond Engineering Co Inc Richmond 5 Va

BINS—nail & bolt

Deluxe Metal Furniture Co Warren Pa
Frick-Gallagher Mfg Co Wellston O
Lyon Metal Products Inc Aurora Ill
Stackbin Corp Providence R I
Universal Steel Equipment Corp 135 W 23rd NY NY

BITS, GIMLETS

E W Deuse Co Chester Conn
Greenlee Bros & Co Rockford Ill
Mephisto Tool Co Inc Hudson NY
Peck Stow & Wilcox Co Southington Conn
The Stanley Wks New Britain Conn p.253
The Wellman Products Co Cleveland 3 Ohio

BITS—saw

American Saw Mill Mchry Co Hackettstown N J
E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
R Hoe & Co Inc 910 E 138th St New York 54 N Y
Simonds Saw & Steel Co Fitchburg Mass
Southern Saw Wks Atlanta Ga
Yates-American Machine Co Beloit Wis

BLOCKS—tackle

Clyde Iron Works Inc Duluth 1 Minn
Lanebro Mfg Co Inc Poughkeepsie N Y
The Ney Mfg Co 948 High Av S W Canton 4 Ohio
John A Roebling's Sons Co Trenton N J
Starline Inc Harvard Ill
Upson-Walton Co Cleveland Ohio
Washington Iron Works Seattle 4 Wash
Western Block Co Lockport N Y

BLOWER SYSTEMS—sawmill & planing mill

Allington & Curtis Mfg Co Saginaw Mich
Champion Blower & Forge Co Lancaster Pa
Chase Turbine Mfg Co Orange Mass
Clarage Fan Co Kalamazoo 16 Mich
Connecticut Blower Co P O Box 884 Hartford 1 Conn
Corinth Machinery Co Corinth Miss
Houston Blow Pipe & Sht Mtl Wks Houston Tex p.403
Jacksonville Blow Pipe Jacksonville Fla
Johnson Fan & Blower Corp 1319 W Lake St Chicago 7 Ill
Kirk & Blum Mfg Co Cincinnati Ohio
New York Blower Co 415 Lexington Av NY NY

BOARD—asbestos cement

Acme Asbestos Covering & Flooring Co 246 N Elizabeth Chgo 7 Ill
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Celotex Corp 120 S LaSalle Chgo 3 Ill p.297, 329, 369, 439
Johns-Manville Corp 22 E 40th NY 16 N Y p.280, 301, 347, 375
Keasbey & Mattison Co Ambler Pa p.325
Keystone Asphalt Products Co 43 E Ohio St Chicago 11 Ill
National Gypsum Co Buffalo 2 N Y p.298-299
The Ruberoid Co 500 5th Ave NY 18 N Y p.349

BOARD—cement asbestos, encased insulation

Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Celotex Corp 120 S LaSalle Chgo 3 Ill p.297, 329, 369, 439
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Johns-Manville Corp Box 290 22 E 40th St New York 16 N Y p.280, 301, 347, 375

BOARDS—sign

Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
Erco Mfg Co 2368 N Elston Av Chgo 14 Ill
M & M Wood Working Co Resaprest Div 2301 N Columbia Portland 3 Ore
The Upson Co Lockport N Y

BOILERS—steam & hot water

Brownell Co 321 N Findlay St Dayton 1 O
Bryant Heater Co 17825 St Clair Av Cleveland 10 Ohio
Century Engineering Corp Cedar Rapids Iowa
Fluid Heat Div Anchor Post Products Inc 6500 Eastern Av Baltimore 24 Md
Hedges - Walsh - Weidner Co Chattanooga Tenn
The Heil Co 3000 W Montana St Milwaukee 1 Wis
International Heater Co Utica 2 N Y
Kewanee Boiler Corp Kewanee Ill
Lookout Boiler & Mfg Co Chattanooga 1 Tenn
R Munroe & Sons Mfg Corp Pittsburgh 22 Pa (hot water only)
National Radiator Co 221 Central Av Johnstown Pa
Penn Boiler & Burner Mfg Corp Box 1079 Lancaster Pa
Richmond Radiator Co 19 E 47th St New York 17 N Y
York-Shipley Inc York Pa

BOLTS—barrel

P & F Corbin New Britain Conn
Frantz Mfg Co Sterling Ill p.410
National Mfg Co Sterling Ill
S Parker Hardware Mfg Corp 27 Ludlow St New York 2 N Y
Penn Hardware Co Reading Pa
Reading Hdwe Corp 6th & Willow Sts Reading Pa
Russell & Erwin Div The American Hardware Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
St Louis Screw & Bolt Co 6900 N Broadway St Louis 15 Mo
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Sterling Bolt Co 209 W Jackson Blvd Chicago 6 Ill
Stronghold Screw Products Inc 222 W Hubbard St Chgo 10 Ill

BOLTS—carriage

Atlas Bolt & Screw Co Cleveland 10 O
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Clark Bros Bolt Co Millidale Conn
The Lamson & Sessions Co Cleveland 2 Ohio
Lewis Bolt & Nut Co Minneapolis 14 Minn
The Maryland Bolt & Nut Co Baltimore 9 Md
National Lock Co Rockford Ill p.237
National Screw & Mfg Co Cleveland 4 Ohio
Pheoll Mfg Co 5700 W Roosevelt Rd Chgo 50 Ill
Rockford Bolt & Steel Co 126 Mill Rockford Ill
Russell Burdsall & Ward Bolt & Nut Co Port Chester NY
St Louis Screw & Bolt Co 6900 N Broadway St Louis 15 Mo
Sterling Bolt Co 209 W Jackson Blvd Chgo 6 Ill

BOLTS—chain

P & F Corbin New Britain Conn
Frantz Mfg Co Sterling Ill p.410
Griffin Mfg Co Erie Pa
The Lamson & Sessions Co Cleveland 2 Ohio
McKinney Mfg Co Pittsburgh Pa p.229
Nat'l Brass Co Grand Rapids Mich
National Mfg Co Sterling Ill
Norwalk Lock Co 395 Broadway NY 13 NY
S Parker Hardware Mfg Co 27 Ludlow New York 2 N Y
Penn Hardware Co Reading Pa
Reading Hdwe Corp 6th & Willow Sts Reading Pa
Richards-Wilcox Mfg Co Aurora Ill p.249
Russell & Erwin Div The American Hardware Corp New Britain Conn p.241
Safe Padlock & Hdw Co Lancaster Pa
St Louis Screw & Bolt Co 6900 N Broadway St Louis 15 Mo
Sargent & Co PO Box 1940 New Haven 9 Conn
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Standard Bronze Co Bayonne 8 N J p.255
The Stanley Wks New Britain Conn p.253
Wagner Mfg Co Cedar Falls Iowa

BOLTS—concrete

The Lamson & Sessions Co Cleveland 2 Ohio
St Louis Screw & Bolt Co 6900 N Broadway St Louis 15 Mo
Sterling Bolt Co 209 W Jackson Blvd Chicago 6 Ill
Stronghold Screw Products Inc 222 W Hubbard St Chgo 10 Ill
Universal Form Clamp Co 1238 N Kostner Av Chgo 51 Ill
Williams Form Engineering Corp Grand Rapids 7 Mich

BOLTS—door & window

Adams-Rite Mfg Co 540 W Chevy Chase Dr Glendale 4 Cal
Barrows Lock Works 24th & Commonwealth Av North Chgo Ill
Casement Hdw Co 406 N Wood Chgo Ill
P & F Corbin Park St New Britain Conn
The Eagle Lock Co Terryville Conn p.232-233
Frantz Mfg Co Sterling Ill p.410
Griffin Mfg Co Erie Pa
H B Ives Co New Haven 8 Conn
Nat'l Brass Co Grand Rapids Mich
Norwalk Lock Co 395 Broadway NY 13 NY
S Parker Hardware Mfg Co 27 Ludlow New York 2 N Y
Reading Hardware Corp Reading Pa
Richards-Wilcox Mfg Co Aurora Ill p.249
Russell & Erwin Div The American Hardware Corp New Britain Conn p.241
Safe Padlock & Hdw Co Lancaster Pa
Sager Lock Works North Chicago Ill
Sargent & Co PO Box 1940 New Haven 9 Conn
Slaymaker Lock Co Dept 376A Lancaster Pa p.252
Standard Bronze Co Bayonne 8 N J p.255
The Stanley Wks New Britain Conn p.253
Stronghold Screw Products Inc 222 W Hubbard St Chgo 10 Ill

BOLTS—expansion

Arro Expansion Bolt Co Box 388 Marion O
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Chicago Expansion Bolt Co 1338 W. Concord Place Chicago 22 Ill
Hubbard & Co 6301 Butler St Pittsburgh 1 Pa
Paine Co 2951 Carroll Av Chgo 12 Ill
Rawlplug Co Inc 271 Church St New York 13 N Y
Safe Padlock & Hdwe Co Lancaster Pa
Star Expansion Products Co Inc 147 Cedar N Y 6 N Y
Sterling Bolt Co 209 W Jackson Blvd Chicago 6 Ill
U S Expansion Bolt Co York Pa

BOLTS—foot

Frantz Mfg Co Sterling Ill p.410
Griffin Mfg Co Erie Pa
The Lamson & Sessions Co Cleveland 2 Ohio
McKinney Mfg Co Pittsburgh 12 Pa p.229

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National Mfg Co Sterling Ill
S Parker Hardware Mfg Co 27 Ludlow St New York 2 N Y
Penn Hardware Co Reading Pa
Reading Hdwe Corp 6th & Willow Sts Reading Pa
Russell & Erwin Div The American Hardware Corp New Britain Conn p.241
Safe Padlock & Hardware Co Lancaster Pa
St Louis Screw & Bolt Co 6900 N Broadway St Louis 15 Mo
Sargent & Co PO Box 1940 New Haven 9 Conn
Shelby Spring Hinge Co Shelby Ohio
The Stanley Works New Britain Conn p.253
Wagner Mfg Co Cedar Falls Iowa

BOLTS—garage door

P & F Corbin New Britain Conn
Frantz Mfg Co Sterling Ill p.410
Griffin Mfg Co Erie Pa
The Lamson & Sessions Co Cleveland 2 Ohio
McKinney Mfg Co Pittsburgh Pa p.229
Richards-Wilcox Mfg Co Aurora Ill p.249
St Louis Screw & Bolt Co 6900 N Broadway St Louis 15 Mo
Sargent & Co PO Box 1940 New Haven 9 Conn
The Stanley Wks New Britain Conn p.253
Starline Inc Harvard Ill
Sterling Bolt Co 209 W Jackson Blvd Chicago 6 Ill
Stronghold Screw Products Inc 222 W Hubbard St Chgo 10 Ill

BOLTS—machine

Atlas Bolt & Screw Co Cleveland 10 O
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Clark Bros Bolt Co Milldale Conn
Columbia Nut & Bolt Co Bridgeport 3 Conn
Hubbard & Co 6301 Butler St Pittsburgh 1 Pa
The Lamson & Sessions Co Cleveland 2 Ohio
Lewis Bolt & Nut Co Minneapolis 14 Minn
Maryland Bolt & Nut Co Baltimore 9 Md
Pheoll Mfg Co 5700 W Roosevelt Rd Chgo 50 Ill
Rockford Bolt & Steel Co 126 Mill Rockford Ill
Russell Burdsall & Ward Bolt & Nut Co Port Chester NY
St Louis Screw & Bolt Co 6900 N Broadway St Louis 15 Mo
Sterling Bolt Co 209 W Jackson Blvd Chgo 6 Ill
Stronghold Screw Products Inc 222 W Hubbard St Chgo 10 Ill

BOLTS—stove

Atlas Bolt & Screw Co Cleveland 10 O
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Clark Bros Bolt Co Milldale Conn
Continental Screw Co New Bedford Mass
Elco Tool & Screw Corp 1800 Broadway Rockford Ill
The Lamson & Sessions Co Cleveland 2 Ohio
National Lock Co Rockford Ill p.237
Nat'l Screw & Mfg Co Cleveland O
Reed & Price Mfg Co Worcester 1 Mass (slotted & recessed)
Rockford Screw Products Co 2501 9th St Rockford Ill
Russell Burdsall & Ward Bolt & Nut Co Port Chester NY
St Louis Screw & Bolt Co 6900 N Broadway St Louis 15 Mo
Sterling Bolt Co 209 W Jackson Blvd Chgo 6 Ill
Stronghold Screw Products Inc 222 W Hubbard St Chgo 10 Ill
United Screw & Bolt Corp Cleveland 2 O

BOLTS—toggle

Ackerman-Johnson Co 625 W Jackson Blvd Chicago 6 Ill
Arro Expansion Bolt Co Box 388 Marion O
Chicago Expansion Bolt Co 1338 W Concord Place Chicago 22 Ill
Hubbard & Co 6301 Butler St Pittsburgh 1 Pa
The Lamson & Sessions Co Cleveland 2 Ohio
Paine Co 2951 Carroll Av Chgo 12 Ill
Star Expansion Products Co Inc 147 Cedar N Y 6 N Y
United Screw & Bolt Corp Cleveland 2 O
U S Expansion Bolt Co York Pa

BOOKS—building, estimating

All books listed below are for sale by AMERICAN LUMBERMAN INC., 139 N. Clark St., Chicago 2, Ill.

Blue Print Reading.....$1.50
Carpentry 2.50
Douglas Fir Use Book..... 1.50
How to Estimate for the Building Trades 5.50
Steel Square Pocket Book..... 1.25
The Carpenters' Square and Its Uses ..... .25
Wood Construction, Principles, Practices, Details 6.50
Wood Mouldings 1.00
Wood Structural Design Data..... 2.50

BOOKS—calculating lumber footage

Lumberman's Actuary $10.00
Baughman's Buyer & Seller
Pocket Edition $2.50
Desk $6.00
Handy Lumber Calculator..... .50
Lightning Veneer Calculator.....$5.00

BOOKS—forestry

Elements of Forest Mensuration..$4.50
Timber Products and Industries.... 4.00
Woodsman's Manual 3.25

BOOKS—grading rules

Rules for the Measurement and Inspection of Hardwood Lumber, Cypress, Veneers and Thin Lumber ..... .50
Standard Grading and Dressing Rules for Douglas Fir, Sitka Spruce West Coast Hemlock Western Red Cedar..... .50
Standard Grading Rules for Ponderosa Pine, Sugar Pine, Idaho White Pine, Lodgepole Pine, Larch-Douglas Fir, White Fir, Engelmann Spruce, Incense Cedar, Red Cedar Lumber..... .50
Standard Grading Rules for Northern Pine, Norway Pine, Jack Pine, Eastern Spruce, Western White Spruce, Balsam, Tamarack, Aspen ..... .50
Standard Specifications for Southern Pine Lumber..... .50

BOOKS—house designs, plans

Practical Plans for Modern Homes —A 36-page booklet containing 51 actual house plans. Sample copy 20c. AMERICAN LUMBERMAN INC Chicago 2 Ill
Brown-Blodgett Co St Paul Minn
L F Garlinghouse Co Topeka Kan
Home Plan Book Co 1596 Selby Av St Paul 4 Minn
Housing Plan Service Inc Dept 102 140 Nassau St NY 7 NY.....$0.25
National Plan Service Inc 1315 W Congress Chgo 7 Ill

BOOKS—retail yard merchandising

Creative Selling to Bldg Products Consumers $1.50

BOOKS—stair building

Stair Building $2.00
Stair Builders Guide.....$3.50

BOOKS—wood utilization, properties

Identification of the Timbers of Temperate North America 3.50
Lumber & Its Uses..... 4.00
Plywoods—Development & Manufacture 4.00
The Properties & Uses of Wood.. 3.50
This Fascinating Lumber Business 4.00

BOOKS—tally

Frank R. Buck & Co 2133 W Toughy Av Chgo 45 Ill
Moore Business Forms Inc 900 Buffalo Av Niagara Falls N Y

BOXES—mortar mixing

The Adams Co Dubuque Iowa
American Steel Works Kansas City 8 Mo
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Jackson Mfg Co Harrisburg Pa
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105
Metal Prod Corp Weehawken N J
Newark Ladler and Bracket Co Inc Walnut and Central Avenues Clark (Rahway) N J
White Pine Sash Co Spokane 7 Wash

BRACES—garage door

Champion Hdw Co Geneva O
Fiwale Equipment Mfg Co 165 Church NY 7 NY
National Mfg Co Sterling Ill
Shelby Spring Hinge Co Shelby O
The Stanley Wks New Britain Conn p.253
Wagner Mfg Co Cedar Falls Iowa

BRACKETS—roof

Adams Co Dubuque Ia
The Davis & Siehl Co Cincinnati 23 O
Holm's Mfg Co of Ohio 106 N Main St Akron 8 Ohio
Marvel Equipment Co 1183 N Main St Oshkosh Wis (adjustable) p.487
Newark Ladder & Bracket Co Inc Clark (Rahway) N J
The Stanley Wks New Britain Conn p.253
Wagner Mfg Co Cedar Falls Iowa

BRACKETS—shelf

American Cabinet Hardware Corp Dept 1-AP Rockford Ill p.227
The Autoyre Co Oakville Conn
P & F Corbin Park St New Britain Conn
Frantz Mfg Co Sterling Ill p.410
Griffin Mfg Co Erie Pa
W C Heller & Co Cat #40A 1050 Bryant St Montpelier Ohio p.468
Knape & Vogt Mfg Co 658 Richmond St N W Grand Rapids 4 Mich
McKinney Mfg Co Pittsburgh Pa p.229
Miami Cabinet Div Philip Carey Mfg Co Middletown Ohio
National Mfg Co Sterling Ill
S Parker Hardware Mfg Corp 27 Ludlow St New York 2 N Y
Russell & Erwin Div The American Hardware Corp New Britain Conn p.241
The Stanley Wks New Britain Conn p.253
Wilmac Metal Products 2632 N Central Av Chgo 39 Ill p.79

BRACKETS—wall

P & F Corbin Park St New Britain Conn
W C Heller & Co Cat #40A 1050 Bryant St Montpelier Ohio p.468
H B Ives Co New Haven Conn
Marvel Equipment Co 1183 N Main St Oshkosh Wis p.487
S Parker Hardware Mfg Co 27 Ludlow New York 2 N Y
Standard Bronze Co Bayonne 8 N J p.235
Watertown Table-Slide Corp Watertown Wis (folding)

BRAZERS—band saw

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Oliver Machinery Co Grand Rapids 2 Mich
Prescott Co Menominee Mich

BRICK CARRIERS

Adams Co Dubuque Iowa
Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105
Vulcan Tool Mfg Co Quincy 69 Mass

BRICK—common

Acme Brick Co Ft Worth 2 Texas
Adel Clay Products Co Des Moines Ia
Baltimore Brick Co Baltimore 5 Md
Denver Sewer Pipe & Clay Co Denver 1 Colo
Great Falls Brick Co Great Falls Mont
Illinois Brick Co 228 N La Salle Chgo Ill
Sealcon Products Inc Minneapolis 1 Minn
Sheffield Brick & Tile Co Sheffield Ia
Washington Brick & Lime Co Box 2198 Spokane 8 Wash

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BRICK—face

Acme Brick Co Ft Worth 2 Texas
Adel Clay Products Co Des Moines Ia
Baltimore Brick Co Baltimore 5 Md
Chicago Fire Brick Co 1461 N Elston Av Chgo 22 Ill
Denver Sewer Pipe & Clay Co Denver 1 Colo
Gladding McBean & Co 1275 Harrison St San Francisco 3 Calif
Great Falls Brick Co Great Falls Mont
Sealcon Products Inc Minneapolis 2 Minn
Sheffield Brick & Tile Co Sheffield Ia
Washington Brick & Lime Co Box 2198 Spokane 8 Wash

BRICK—fire

Acme Brick Co Ft Worth 2 Texas
Cannelton Sewer Pipe Co Inc Cannelton Ind
Chicago Fire Brick Co 1461 Elston Av Chicago 22 Ill
General Refractories Co Real Estate Trust Bldg Phil 7 Pa
Gladding McBean & Co 1275 Harrison St San Francisco 3 Calif
A P Green Fire Brick Co Mexico Mo
Harbison Walker Refractories Co Farmers Bank Bldg Pittsburgh Pa
Mexico Refractories Co Mexico Mo
North American Refractories Co Cleveland 14 O
Owensboro Sewer Pipe Co Inc Owensboro Ky
Pacific Clay Products 306 W Av 26 Los Angeles 31 Cal
Plibrico Jointless Firebrick Co 1800 N Kingsbury Chgo 14 Ill
Robinson Clay Prod Co Akron Ohio
Seaboard Refractories Co Perth Arboy N J
Universal Sewer Pipe Co Union Commerce Bldg Cleveland 14 Ohio
Walsh Refractories Corp 4070 N First St St Louis 7 Mo
Washington Brick & Lime Co Box 2198 Spokane 8 Wash
What Cheer Clay Products Co What Cheer Iowa

BRICK—glazed

Acme Brick Co Fort Worth 2 Texas
Denver Sewer Pipe & Clay Co Denver 1 Colo
Washington Brick & Lime Co Box 2198 Spokane 8 Wash

BRICKS—rubbing

American Emery Wheel Works Providence R I
Norton Co 1 New Bond St Worcester 6 Mass
Simonds Abrasive Co Philadelphia 37 Pa
Sterling Grinding Wheel Div of the Cleveland Quarries Co Tiffin Ohio

BRIDGING—steel

Beloit Steel Industries Inc 307 City Hall Bldg Rockford Ill p.135
The Davis & Siehl Co Cincinnati 23 O
Decatur Iron & Steel Co Decatur Ala
Great Lakes Steel Corp Stran-Steel Div Detroit 26 Mich
Lanebro Mfg Co Inc Poughkeepsie N Y
Republic Steel Corp Cleveland 1 Ohio

BRUSHES—household

American Brush Corp 1119 N Franklin Chgo 10 Ill
Devoe & Raynolds Co Inc Brush Div Dept A-6 Princeton Indiana p.216
J I Holcomb Mfg Co Indianapolis Ind
Illinois Duster & Brush Co 1926 Webster Av Chgo 14 Ill
Michigan Brush Mfg Co Detroit Mich
National Brush Co Aurora Ill
Osborn Mfg Co Cleveland 14 Ohio
Silver-Chamberlin Co Clayton N J

BRUSHES—industrial

Devoe & Raynolds Co Inc Brush Div Dept A-6 Princeton Indiana p.216
J I Holcomb Mfg Co Indianapolis Ind
Illinois Duster & Brush Co 1926 Webster Av Chgo 14 Ill
Michigan Brush Mfg Co Inc Detroit Mich
Milwaukee Brush Mfg Co Milwaukee Wis
National Brush Co Aurora Ill
Newark Brush Co Kenilworth N J
The Osborn Mfg Co Cleveland 14 Ohio

BRUSHES—paint & varnish

Baker Brush Co Inc 83 Grand St NY NY
Berry Bros Inc 211 Leib St Detroit 7 Mich
Devoe & Raynolds Co Inc Brush Div Dept A-6 Princeton Indiana p.216
E I du Pont de Nemours & Co Inc Wilmington 98 Del
The Glidden Co Cleveland 2 Ohio
The Osborn Mfg Co Cleveland 14 Ohio
Pittsburgh Plate Glass Co Baltimore 29 Md p.212
Plasti-Kote Inc 425 Lakeside Av NW Cleveland 13 Ohio
Rubberset Co 56 Ferry Newark 5 N J
Solo-Horton Brush Co Inc 135 W 19th New York 11 N Y
Whiting-Adams Co Inc 710 Harrison Av Boston Mass
Wooster Brush Co Wooster Ohio

BULKHEADS—cellar

The Bilco Co 164 Hallock Av New Haven 6 Conn

BURGLAR ALARMS

J H Bunnell & Co 215 Fulton NY NY
Diebold Inc Canton 2 Ohio
Edwards & Co Inc Norwalk Conn
Federal Elec Co 8706 S State Chgo Ill
Genl Burglar Alarm Co Inc 365 E 146th N Y 55 N Y
Guardian Elec Mfg Co 1400 W Washington Chgo Ill
Lyon Rural Electric Co San Diego 12 Calif

BURNERS—coal

Atlanta Stove Works Inc Atlanta Ga
Eagle Stove Works Rome Ga
Estate Stove Co Hamilton Ohio
Excelsior Stove & Mfg Co Quincy Ill
Laurelton Foundry Co Inc Laurelton Pa
Leake Stove Co 114 W 11th St Kansas City 6 Mo
Majestic Co 103 Erie St Huntington Ind p.90
Quincy Stove Mfg Co Quincy Ill
Stokol Stoker Co Inc 2060 Northwestern Av Indianapolis 7 Ind

BURNERS—gas

American Radiator & Standard Sanitary Corp Pittsburgh 22 Pa
Barber Gas Burner Co Cleveland O
Bryant Heater Co 17825 St Clair Av Cleveland 10 Ohio
Excelsior Stove & Mfg Co Quincy Ill
Hauck Mfg Co 126 10th St Brooklyn 15 N Y
The Heil Co 2000 W Montana St Milwaukee 1 Wis
Iron Fireman Co 3170 W 106th St Cleveland 11 Ohio
Majestic Co 103 Erie St Huntington Ind p.90
National Airoil Burner Co 1291 E Sedgley Av Philadelphia 34 Pa
Norge Heating & Conditioning Div Borg Warner Corp Detroit Mich
Penn Boiler & Burner Mfg Corp Lancaster Pa
Surface Combustion Corp Toledo 1 Ohio
Wheeling Furnace Corp Martins Ferry O

BURNERS—oil

American Radiator & Standard Sanitary Corp Pittsburgh 22 Pa
Automatic Burner Corp 1823 W Carroll Chgo 12 Ill
Century Eng Corp Cedar Rapids Iowa
Chalmers Oil Burner Co Minneapolis Minn
Chrysler Corp Airtemp Div Dayton 1 Ohio
Fluid Heat Div Anchor Post Products Inc 6500 Eastern Av Baltimore 24 Md
Franklin Oil Heating Inc Columbus O
Gilbert & Barker Mfg Co West Springfield Mass
Hauck Mfg Co 126 10th St Brooklyn 15 N Y
The Heil Co 3000 W Montana St Milwaukee 1 Wis
H C Little Burner Co Inc 2nd & Lincoln San Rafael Cal
Majestic Co 103 Erie St Huntington Ind p.90
May Oil Burner Corp Baltimore Md
National Airoil Burner Co 1291 E Sedgley Av Philadelphia 34 Pa
Paragon Utilities Corp 50 Van Dam St Brooklyn 22 N Y
Penn Boiler & Burner Mfg Corp Box 1079 Lancaster Pa
Silent Automatic Corp Detroit Mich
Silent Glow Oil Burner Corp Hartford Conn
Silent Sioux Oil Burner Corp Orange City Iowa
Simplex Oil Heating Corp 11 Park Pl NY 7 NY
Timken Silent Automatic Div The Timken Detroit Axle Co Detroit 32 Mich
Williams Oil-O-Matic Div Eureka Williams Corp Bloomington Ill
York-Shipley Inc York Pa

BURNERS—sawdust

Allington & Curtis Mfg Co Saginaw Mich
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Industrial Iron Works 6011 S W Macadam Av Portland 1 Ore
Seattle Boiler Wks 5237 E Marginal Way Seattle Wash p.488
Western Fdry Co 2400 S W Water Av Portland 1 Ore

BURNERS—weeds

Aeroil Products Co West New York N J
Otto Bernz Co Inc 280 Lyell Av Rochester 6 N Y
Hauck Mfg Co 126 10th St Brooklyn 15 N Y
H D Hudson Mfg Co Dept D-16 589 E Illinois St Chicago 11 Ill

CABINETS—bathroom, metal

American Device Mfg Co Red Bud Ill
Columbia Metal Box Co 260 E 143rd St New York 51 N Y
Conant Bros Co 34 Portland St Boston 14 Mass
Copco Steel & Engineering Co 14035 Grand River Av Detroit 27 Mich
Excel Metal Cabinet Co Jamestown N Y
Faries Mfg Co Decatur 70 Ill
The Grote Mfg Co Inc Grote Square, Bellevue Ky p.416
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Ideal Cabinet Corp 7730 Joy Rd Detroit 4 Mich p.425
The F H Lawson Co 809 Evans St Cincinnati 4 Ohio
Miami Cabinet Div Philip Carey Co Middletown O
Packard Formsteel Corp 3354 N Crawford Chgo 41 Ill p.420-421
Chas Parker Co Meriden Conn
Porcelain Metals Corp Inc 1304 Magnolia Av Louisville 10 Ky
Royal Glass Works Corp 50-20 25th Long Island City 1 N Y
Shepler Mfg Co 1312 Sheffield St N S Pittsburgh 12 Pa
E C Smith Mfg Corp 1515 N Artesian Chgo 22 Ill
Standard Steel Cabinet Co 3711 N Milwaukee Av Chgo 41 Ill
Toledo Plate & Window Glass Co 1041 Utica St Toledo 2 Ohio
Universal Fabricators 1801 Boone Av Bronx 60 N Y

CABINETS—bathroom, wood

Angel Novelty Co 340 Broad St Fitchburg Mass
Carr Adams & Collier Co Dubuque Ia p.147
Cole Mfg Co P O Box 2657 Memphis 2 Tenn p.192
Curtis Companies Inc Clinton Ia
Dyke Bros Little Rock Ark p.192
Farley & Loetscher Mfg Co Dubuque Ia
General Wood Works Council Bluffs Ia
Gregg & Son Nashua N H p.158-159
Hoosier Sash & Door Co Anderson Ind p.194
Huttig Mfg Co Dept AL Muscatine Ia p.171
Ideal Co Box 889 Waco Tex
Walter S Kraus Co 43-10 48th Av Woodside N Y
Marquart Millwork Co Oshkosh Wis p.148
Morgan Company Oshkosh Wis
Rock Island Sash & Door Wks Rock Island Ill

CABINETS—display

Ames Metal Moulding Co Inc 227 144th St New York 51 N Y
Deluxe Metal Furniture Co Warren Pa
Dyke Bros Little Rock Ark p.192
General Wood Works Council Bluffs Ia
Gregg & Son Nashua N H p.158-159

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CABINETS—fire equipment

W D Allen Mfg Co 566 W Lake Chgo 6 Ill
Elkhart Brass Mfg Co Inc Elkhart Ind
Excel Metal Cabinet Co Jamestown N Y
Safety Fire Extinguisher Co 293 7th NY NY
Wirt & Knox Mfg Co Phil Pa

CABINETS—general household

Curtis Cos Inc Clinton Ia
Excel Metal Cabinet Co Inc Jamestown N Y
General Wood Works Council Bluffs Ia
Gregg & Son 24 Crown St Nashua N H p.158-159
Grote Mfg Co Inc Grote Sq Bellevue Ky p.416
Ideal Co Box 889 Waco Tex
Walter S Kraus Co 43-10 48th Av Woodside N Y
Lyon Metal Products Inc Aurora Ill
Marquart Millwork Co Oshkosh Wis p.148
McDonald Mfg Co 544 E 31st St Los Angeles 11 Cal
Mullins Mfg Corp Warren O
Rock Island Sash & Door Wks Rock Island Ill
Slosswood Inc 913 Cherokee Av Nashville Tenn

CABINETS—kitchen, metal

Acme Metal Products Corp Box 237 Blue Island Ill
American Central Div Avco Mfg Co Connersville Ind p.419
Elgin Stove & Oven Div of Acme Visible Records Inc Elgin Ill
Elkay Mfg Co 1874 S 54th Av Chgo 50 Ill
Excel Metal Cabinet Co Jamestown N Y
General Electric Co Schenectday 5 N Y
Gold Seal Mfg Co 1228 W Kinzie Chgo 22 Ill
Harrison Steel Cabinet Co 4718 W 5th Chgo 44 Ill
Hotpoint Inc 5600 W Taylor St Chicago 44 Ill
Lyon Metal Products Inc Aurora Ill
Midwest Mfg Co Galesburg Ill
Miller Metal Products Inc 2226 Russell St Baltimore 30 Md p.423
Mullins Mfg Corp Warren O
Murphy Door Bed Co 30 N LaSalle Chgo 2 Ill
Paragon Utilities Corp 50 Van Dam St Brooklyn 22 N Y
St Charles Mfg Co St Charles Ill
Tracy Mfg Co 3125 Preble Av Pittsburgh 12 Pa
Universal Fabricators 1801 Boone Av Bronx 60 N Y

CABINETS—kitchen, wood

Angel Novelty Co 340 Broad St Fitchburg Mass
Carr Adams & Collier Co Dubuque Ia p.147
Cole Mfg Co P O Box 2657 Memphis 2 Tenn p.192
Curtis Companies Inc Clinton Ia
Dyke Bros Little Rock Ark p.192
Farley & Loetscher Mfg Co Dubuque Ia
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Gregg & Son Nashua N H p.158-159
Huttig Mfg Co Dept AL Muscatine Iowa p.171
Huttig Sash & Door Co 1206 S Vandeventer Av St Louis 10 Mo
I-XL Furniture Co Inc Goshen Ind
Ideal Co Box 889 Waco Tex
Kitchen Maid Corp Andrews Ind
Knox Corp Thomson Ga
The Long-Bell Lumber Co R A Long Bldg Kansas City 6 Mo & Longview Wash
Marquart Millwork Co Oshkosh Wis p.148
The Mengel Co Inc Louisville 1 Ky p.13, 181
Morgan Co Oshkosh Wis
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
Mutschler Bros Co Nappanee Ind
Frank C Snedaker & Co Inc Philadelphia 40 Pa
Sterling-Freeland Industries Inc 4701 N Western Av Chgo 25 Ill p.423

CABINETS—shower bath

Flat Metal Mfg Co 154 E Erie St Chicago Ill
Milwaukee Stamping Co 802 S 72nd St Milwaukee 14 Wis
St Charles Mfg Co St Charles Ill
Tiletone Co 2323 N Wayne Chicago 14 Ill
Henry Weis Mfg Co Inc 307 Oak Elkhart Ind

CABLE—insulated

General Electric Co Schenectady N Y
Hazard Insulated Wire Works Div of The Okonite Co Wilkes-Barre Pa
John A Roebling's Sons Co Trenton 2 N J
Simplex Wire & Cable Co 79 Sidney Cambridge 39 Mass

CALCIMINE

Alabastine Paint Products Grand Rapids 9 Mich
Carbola Chemical Co Inc Natural Bridge N Y
Devoe & Raynolds Co Inc Dept A-5 787 First Av N Y 17 N Y p.207
Ewing M Fox Co 240 E 136 NY NY
John Lucas & Co Phil Pa
The Martin-Senour Co 2520 S Quarry St Chicago 8 Ill
Benjamin Moore & Co 511 Canal NY NY
Muralo Co Inc 566 Richmond Terrace Staten Isl N Y
The Reardon Company St Louis 6 Mo p.218-219
Reliable Paste Co 3560 Shields Chgo Ill
U S Kalsomine Co 50 Church NY NY
Wadsworth Howland & Co 141 Federal Boston Mass
Wesco Waterpaints Inc 2 Lexington East Boston 28 Mass

CALCIUM CHLORIDE

American Cyanamid & Chem 30 Rockefeller Plaza NY NY
Geo W Diener Mfg Co 406 N Monticello Av Chgo 24 Ill
The Dow Chemical Co Midland Mich
E I du Pont de Nemours & Co Inc Wilmington 98 Del
Geo C Gordon Chemical Co Kansas City 7 Mo
Pennsylvania Salt Mfg Co Philadelphia 7 Pa
Solvay Sales Div Allied Chemical & Dye Corp 40 Rector N Y 6 N Y

CALENDARS

Brown Blodgett Co St Paul Minn
Economy Novelty & Printing Co 225 W 39th N Y 18 N Y
L F Grammes & Sons Inc Allentown Pa
The Kemper Thomas Co Cincinnati 12 Ohio
The Thos D Murphy Co Red Oak Iowa
National Plan Service Inc 1315 Congress Chgo 7 Ill
Parisian Novelty Co 3510 S Western Av Chicago 9 Ill
Shedd Brown Mfg Co Minneapolis Minn

CANVAS, CANVAS PRODUCTS

American Tent & Awning Co 1132 Mission St San Francisco 3 Calif
The Astrup Co 2937 W 25th St Cleveland 13 Ohio
Bemis Bro Bag Co 408 Pine St St Louis 2 Mo
Canvas Products Co St Louis 4 Mo
Canvas Specialty Co PO Box 937 Hartford Conn
Fulton Bag & Cotton Mills Co Atlanta 1 Ga
J W Johnson Co 1237 N Honore Chgo Ill
New York Drop Cloth Mfg Co 10-57 Jackson Av Long Island City 1 N Y
Standard Awning Co 83 Avon St Hartford 5 Conn
Tucker Duck & Rubber Co Fort Smith Ark
Werner Canvas Products Co 609 Bergen Brooklyn 17 N Y

CANVAS—washable, wall

The Astrup Co 2937 W 25th St Cleveland 13 Ohio
Fulton Bag & Cotton Mills Atlanta 1 Ga
Wm J Stanley Co Inc 401 Broadway N Y 13 N Y

CAPS—advertising

Economy Novelty & Printing Co 225 W 39 N Y 18 N Y
Kemper Thomas Co Cincinnati O
Minnesota Specialty Co 119 N 4th St Minneapolis 1 Minn
New York Adv Cap Co Inc 396 Broadway NY NY
Standard Awning Co 83 Avon St Hartford 5 Conn

CAR DOOR OPENER

The Nolan Co Bowerston O

CAR MOVERS

Advance Car Mover Co Appleton Wis
Diamond Iron Works Inc Minneapolis 11 Minn
Jeffrey Mfg Co 827 N 4th St Columbus 16 Ohio
Stephens-Adamson Mfg Co Aurora Ill
Stimel Winch Co 37-24 33rd St Long Island City 1 N Y

CAR DOOR LUMBER ROLLERS

American Logging Tool Co Evart Mich
Frank R Buck & Co 2133 W Touhy Av Chgo 45 Ill

CAR PULLERS

Advance Car Mover Co Appleton Wis
Godfrey Conveyer Co Elkhart Ind
Harnischfeger Corp Milwaukee Wis
Jeffrey Mfg Co 824 N 4th St Columbus 16 Ohio
Moore Dry Kiln Co Box 4248 Jacksonville 1 Fla p.65
Silent Hoist & Crane Co 860 63rd Brooklyn 20 N Y p.482
Stephens-Adamson Mfg Co Aurora Ill
Stimel Winch Co 37-24 33rd St Long Island City 1 N Y

CARRIAGES—sawmill

Allis Chalmers Mfg Co Milwaukee Wis p.484
American Saw Mill Machinery Co Hackettstown N J
Chase Turbine Mfg Co Orange Mass
Corinth Machinery Co Corinth Miss
Corley Mfg Co Chattanooga 1 Tenn
Enterprise Co Columbiana O
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
Lane Mfg Co Montpelier Vt
Prescott Co Menominee Mich
The Wheland Co Chattanooga 2 Tenn

CARS—lumber transfer

American Mfg Co Inc 2119 Pacific Av Tacoma 2 Wash
Leitelt Iron Works Grand Rapids 2 Mich (power)
Moore Dry Kiln Co P O Box 4248 Jacksonville 1 Fla p.65
Nutting Truck & Caster Co 2201 Division St Faribault Minn

CARTS—fire hose

W D Allen Mfg Co 566 W Lake Chgo 6 Ill
Elkhart Brass Mfg Co Inc Elkhart Ind
Safety Fire Extinguisher Co 293 7th NY NY
Wirt & Knox Mfg Co Phil Pa

CASTERS

Hamilton Caster & Mfg Co Hamilton Ohio
Nutting Truck & Caster Co 2201 Division St Faribault Minn

CATCHES

Adams-Rite Mfg Co 540 W Chevy Chase Dr Glendale 4 Cal
Akron Hdwe Mfg Co 3616 33rd St Long Island City 1 N Y
American Brass Goods Co Grand Rapids 2 Mich
American Cabinet Hdw Corp Dept 1-AP Rockford Ill p.227
Casement Hdw Co 406 N Wood Chgo Ill
P & F Corbin Park St New Britain Conn
Fiwale Equipment Mfg Co 165 Church St New York 7 N Y
L F Grammes & Sons Inc Allentown Pa
Nat'l Brass Co Grand Rapids Mich
National Lock Co Rockford Ill p.237
The Ney Mfg Co 940 High Av S W Canton 4 Ohio (barn door)
Peabody-Acker Inc 5816 Hooper Av Los Angeles Calif
Russell & Erwin Div The American Hdw Corp New Britain Conn p.241

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Safe Padlock & Hdw Co Lancaster Pa
Sargent & Co PO Box 1940 New Haven 9 Conn
Slaymaker Lock Co Dept 376A Lancaster Pa p.252
Standard Bronze Co Bayonne 8 N J p.255
The Stanley Wks New Britain Conn p.253

CAULKING COMPOUND

Armstrong Co 4063 S La Salle Chgo 9 Ill p.277
The Biddle Co 612 S Main St St Louis 2 Mo p.191
Philip Carey Co Dept AL-4 Lockland Cincinnati 15 O p.336
Ceresit Waterproofing Corp 512 S Canal Chgo 7 Ill
Chemical Supply Co 225 Plymouth Bldg Cleveland 15 Ohio
Christy Co Inc St Louis 10 Mo
Continental Asbestos & Refining Corp 1 Madison Av New York 10 N Y
Devoe & Raynolds Co Inc Dept A-5 787 First Av N Y 17 N Y p.207
Felton Sibley & Co Inc 136 N 4th Philadelphia 6 Pa
Fort Pitt Chem Co 26th & Smallman St Pittsburgh 22 Pa
Gibson-Homans Co 2366 Woodhill Rd Cleveland Ohio
Gumputtie Laboratories 2221 S Archer Av Chicago 16 Ill
Harrop Chemical Co 135 Hoboken Av Jersey City 2 N J
Haynes Products Co 4007 Farnam St Omaha 3 Neb
A C Horn Co 43-42 Tenth St Long Island City 1 N Y
Johns-Manville Corp Box 290 22 E 40th N Y 16 N Y p.280, 301, 347, 375
Jones & Brown Inc 439 6th Av Pittsburgh 19 Pa
Keystone Asphalt Products Co 43 E Ohio St Chicago 11 Ill
Landen Putty Works Malden 48 Mass
Lastik Prod Co Inc Pittsburgh Pa
Macklanburg - Duncan Co Oklahoma City 1 Okla p.157, 262
Mar-Kay Mfg Co 2715 S Second St St Louis Mo
Marsh Wall Products Inc 441 Main St Dover Ohio p.283
Minwax Co Inc 11 W 42nd St New York 18 N Y
Mixtite Corp North Haven Conn
Pittsburgh Plate Glass Co Pittsburgh 22 Pa p.209
Plastic Prod Co 6475 Georgia Av Detroit 11 Mich
Security Sash & Screen Co 1757 Puritan Av Detroit 3 Mich p.190
Smooth-On Mfg Co 568-574 Communipaw Av Jersey City 4 N J
L Sonneborn Sons Inc 88 Lexington Av NY 16 NY
Standard Dry Wall Products Inc PO Box X New Eagle Pa p.457
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
The Sullivan Co PO Box 2606 Memphis 2 Tenn
Tamms Silica Co 228 N La Salle St Chgo 1 Ill p.449
Tremco Mfg Co Cleveland O
Vital Products Mfg Co 7500 Quincy Av Cleveland 4 Ohio p.279
Weather Seal Co 10 E Pearl St Cincinnati 2 Ohio
Webb Products Co San Bernardino Calif & Norcross Ga
Geo D Wetherill & Co 113 Arch St Philadelphia 6 Pa

CEMENT—air-entraining

Alpha Portland Cement Co 15 S Third St Easton Pa
Kosmos Portland Cement Co Louisville 2 Ky
Louisville Cement Co Inc 315 Guthrie St Louisville 2 Ky
Marquette Cement Mfg Co 20 N Wacker Dr Chicago 6 Ill
Universal Atlas Cement Co U S Steel Corp Sub 135 E 42nd St New York 17 N Y

CEMENT—asbestos

Acme Asbestos Covering & Flooring Co 246 N Elizabeth Chgo 7 Ill
American Asphalt Roof Corp 7600 E 15th Kansas City 3 Mo
Asbestos Asphalt & Insulation Mfg Co 2100 Fullerton Av Chgo 47 Ill
Philip Carey Co Dept AL-4 Lockland Cincinnati 15 O p.336
Clinton Metallic Paint Co Clinton N Y
Curtis Mfg & Asbestos Co 29 Lewis Wharf Boston 10 Mass
The Flintkote Co 30 Rockefeller Plaza NY NY
Johns-Manville Corp Box 290 22 E 40th N Y 16 N Y p.280, 301, 347, 375
Keasbey & Mattison Co Ambler Pa p.325
Lastik Products Co Inc Keenan Bldg Pittsburgh 22 Pa
Paraffine Companies 475 Brannan St San Francisco 19 Cal
The Ruberoid Co 500 Fifth Av NY 18 NY p.349
Rutland Fire Clay Co Rutland Vt
Sargent-Gerke Co Indianapolis 6 Ind
Standard Asbestos Mfg Co 860 Evergreen Av Chgo 22 Ill

CEMENT—iron

Ceresit Waterproofing Corp 512 S Canal Chgo 7 Ill
Clark Cast Steel Cement Co 2612 W 17th Wilmington 73 Del
Ohio Hydrate & Supply Co Woodville O p.448
Pecora Paint Co Inc American & Venango Sts Philadelphia 40 Pa
Ranetite Mfg Co Inc 1917 S Broadway St Louis Mo
Smooth-On Mfg Co 568-574 Communipaw Av Jersey City 4 N J
Tilette Cement Co Inc 401 Lafayette St New York 3 N Y

CEMENT—mortar

Alpha Portland Cement Co Easton Pa
The Carney Co Inc 125 S 5th St Minneapolis Minn
Ideal Cement Co Colorado Portland Div 821 17th St Denver 2 Colo
Lehigh Portland Cement Co Allentown Pa
Louisville Cement Co Inc 315 Guthrie Louisville 2 Ky
Marquette Cement Mfg Co 20 N Wacker Drive Chicago 6 Ill
Medusa Portland Cement Co 1046-1 Midland Bldg Cleveland 15 O p.457
Southern Cement Co 608 Protective Life Bldg Birmingham 3 Ala
Tamms Silica Co 228 N La Salle St Chgo 1 Ill p.449
Trinity Div General Portland Cement Co 111 W Monore Chicago Ill p.454
Universal Atlas Cement Co U S Steel Corp Sub 135 E 42nd St New York 17 N Y

CEMENT—non staining

Louisville Cement Co Inc 315 Guthrie St Louisville 2 Ky
Medusa Portland Cement Co 1046-1 Midland Bldg Cleveland 15 O p.457
Trinity Div General Portland Cement Co 111 W Monroe Chicago Ill p.454
Universal Atlas Cement Co US Steel Corp Sub 135 E 42nd St N Y 17 N Y

CEMENT—pipe mending

Lake Chemical Co 162-P N Clinton St Chgo 6 Ill p.255

CEMENT—plastic

American Asphalt Roof Corp 7600 E 15th St Kansas City 3 Mo
Bird & Son Inc East Walpole Mass p.333, 356
Blue Ridge Talc Co Inc Henry Va
The Dad & Lad Co New Lenox Ill
Firestone Industrial Products Co Pottstown Pa p.231
Grand Rapids Vapor Kiln Inc Grand Rapids 2 Mich
A C Horn Co 43-42 Tenth Long Island City 1 NY
Lastik Products Co Inc Keenan Bldg Pittsburgh 22 Pa
Mixtite Corp North Haven Conn
National Adhesives 270 Madison Av N Y 16 N Y
Pecora Paint Co Inc American & Venango Sts Philadelphia 40 Pa
Placo Div Paisley Products Inc 718 Washington Av North Minneapolis Minn
Prestile Mfg Co 2860 Lincoln Av Chgo 13 Ill p.300
Republic Creosoting Co Merchants Bank Bldg Indianapolis 4 Ind
The Ruberoid Co 500 Fifth Av New York 18 N Y p.349
S & W Moulding Co 980 Parsons Av Columbus 6 Ohio
Sauereisen Cements Co 2218 Sharpsburg St Pittsburgh 15 Pa
The Sullivan Co PO Box 2606 Memphis 2 Tenn
Technical Supply Co 1911 University Av Palo Alto Cal
The Texas Co 135 E 42nd St New York 17 N Y p.343
Tilette Cement Co Inc 401 Lafayette St New York 3 N Y
Webb Products Co San Bernardino Calif & Norcross Ga
W F Webster Cement Co 224 Thorndike St Cambridge 41 Mass

CEMENT—Portland

Alpha Portland Cement Co Easton Pa
Ashgrove Lime & Portland Cement Co Kansas City Mo
Calif Portland Cement Co Los Angeles Cal
Consolidated Cement Corp 111 W Monroe St Chgo Ill
Dewey Portland Cement Co 310 Ward Pkwy Kansas City 2 Mo
Florida Portland Cement Co Tampa Fla
Ideal Cement Co Colorado Portland Div 821 17th Denver 2 Colo
Kosmos Portland Cement Co Louisville Ky
Lehigh Portland Cement Co Allentown Pa
Lone Star Cement Corp 342 Madison Av NY NY
Louisville Cement Co Inc 315 Guthrie Louisville 2 Ky
Marquette Cement Mfg Co 20 N Wacker Dr Chicago 6 Ill
Medusa Portland Cement Co 1046-1 Midland Bldg Cleveland 15 O p.457
Trinity Div General Portland Cement Co 111 W Monroe Chicago Ill p.454
Universal Atlas Cement Co U S Steel Corp Sub 135 E 42nd St New York 17 N Y

CEMENT—Portland, white

Medusa Portland Cement Co 1046-1 Midland Bldg Cleveland 15 Ohio p.457
Trinity Div General Portland Cement Co 111 W Monroe Chicago Ill p.454
Universal Atlas Cement Co US Steel Corp Sub 135 E 42nd St N Y 17 N Y

CEMENT—refractory

Acme Brick Co Ft Worth 2 Tex
Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Chicago Fire Brick Co 1461 Elston Av Chgo 22 Ill
Christy Co Inc St Louis 10 Mo
Curtis Mfg & Asbestos Co 29 Lewis Wharf Boston 10 Mass
Denver Fire Clay Co Denver Colo
Dewey Portland Cement Co 310 Ward Pkwy Kansas City 2 Mo
Ehret Magnesia Mfg Co Inc Valley Forge Pa
Gen'l Refractories Co Phil Pa
A P Green Fire Brick Co Mexico Mo
Harbison Walker Refractories Co Farmers Bank Bldg Pittsburgh Pa
Johns-Manville Corp Box 290 22 E 40th N Y 16 N Y p.280, 301, 347, 375
Keystone Refractories Co 120 Liberty St NY 6 NY
Laclede-Christy Clay Prod Co St Louis Mo
Mexico Refractories Co Mexico Mo
North American Refractories Co Cleveland 14 O
Plibrico Jointless Firebrick Co 1800 N Kingsbury Chgo 14 Ill
Quigley Co Inc 527 Fifth Av New York
Robinson Clay Prod Co Akron O
Sauereisen Cements Co 2218 Sharpsburg St Pittsburgh 15 Pa
Seaboard Refractories Co Perth Amboy N J
United Gilsonite Laboratories Scranton 1 Pa
Walsh Refractories Corp 4070 N First St St Louis 7 Mo
Washington Brick & Lime Co Box 2198 Spokane 8 Wash

CEMENT—roofing

Acme Asbestos Covering & Flooring Co 246 N Elizabeth Chgo 7 Ill
American Asphalt Roof Corp 7600 E 15th St Kansas City 3 Mo
Barrett Div Allied Chemical & Dye Corp 40 Rector N Y 6 N Y p.351
Blue Ridge Talc Co Inc Henry Va
Philip Carey Co Dept AL-4 Lockland Cincinnati 15 O p.336
Curtis Mfg & Asbestos Co 29 Lewis Wharf Boston 10 Mass
The Dad & Lad Co New Lenox Ill
Flintkote Co 30 Rockefeller Plaza N Y 20 N Y
Ford Roofing Products Co 111 W Washington Chgo 2 Ill
Gibson-Homans Co 2366 Woodhill Rd Cleveland Ohio
A C Horn Co 43-42 Tenth Long Island City 1 NY
Johns-Manville Corp Box 290 22 E 40th N Y 16 N Y p.280, 301, 347, 375
Jones & Brown Inc Pittsburgh Pa
Koppers Co Inc Tar Products Div Pittsburgh 19 Pa
Lastik Products Co Inc Pittsburgh Pa
Lehon Co 4425 S Oakley Chicago 9 Ill
Mixtite Corp North Haven Conn

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The Ruberoid Co 500 Fifth Av NY 18 NY p.349
Rutland Fire Clay Co Rutland Vt
Servicised Products Corp 6051 W 65th St Chicago 38 Ill
Steelcote Mfg Co 3418 Gratiot St Louis 3 Mo
The Sullivan Co PO Box 2606 Memphis 2 Tenn
Tremco Mfg Co Cleveland O
United Gilsonite Laboratories Scranton Pa
U S Gypsum Co 300 W Adams St Chicago 6 Ill p.293
W F Webster Cement Co 224 Thorndike St Cambridge 41 Mass

CEMENT—rubber

Casein Co of America Div of The Borden Co 350 Madison New York 17 N Y
Commercial Paste Co Buttles at Michigan Columbus 8 Ohio
Crescent Products Co Terre Haute Ind
Firestone Industrial Products Co Pottstown Pa p.231
Holdfast Rubber Co Atlanta Ga
H B Fred Kuhls 6413 3rd Av Brklyn N Y
The Las-Stik Mfg Co B & Wayne sts Hamilton Ohio
Minnesota Mining & Mfg Co St Paul 6 Minn
National Adhesives 270 Madison Av N Y 16 N Y
Paisley Products Inc 1770 Canalport Av Chicago 16 Ill
Placo Div Paisley Products Inc 718 Washington Ave North Minneapolis Minn
Rainbow Rubber Co Butler Pa
Ross Chem Prod Detroit Mich
St Louis Rubber Cement Co Inc St Louis Mo
Schacht Rubber Mfg Co Huntington Ind
Servicised Products Corp 6051 W 65th St Chicago 38 Ill
The Sullivan PO Box 2606 Memphis 2 Tenn

CEMENT—tile

Armstrong Co 4063 S L aSalle Chgo 9 Ill p.277
Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Barclay Mfg Co Inc 385 Gerard Av Bronx New York 51 N Y
The Borden Co Chemical Div 350 Madison Av N Y 17 N Y
Marsh Wall Products Inc 441 Main St Dover Ohio p.283
Paisley Products Inc 1770 Canalport Av Chgo 16 Ill
Plastic Products Co 6475 Georgia Av Detroit Mich
Prestile Mfg Co 2860 Lincoln Av Chgo 13 Ill p.300
Sauereisen Cement Co 2218 Sharpsburg St Pittsburgh 15 Pa
Schalk Chemical Co 351 E Second St Los Angeles 12 Cal
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Tilette Cement Co Inc 401 Lafayette St New York 3 N Y
Tylac Co Monticello Ill
Webb Products Co San Bernardino Calif
W F Webster Cement Co 224 Thorndike St Cambridge 41 Mass

CEMENT—waterproofing

Adensite Co Inc 37-19 23rd St Long Island City N Y
Anti-Hydro Waterproofing Co 265 Badger Av Newark 8 N J
Barrett Div Allied Chemical & Dye Corp 40 Rector N Y 6 N Y p.351
Blue Ridge Talc Co Inc Henry Va
Ceraseal Chemical Corp 221 N LaSalle St Chicago 1 Ill
Ceresit Waterproofing Corp 512 S Canal Chgo 7 Ill
Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
E D Coddington Mfg Co 5024 N 37th St Milwaukee 9 Wis
Colorcrete Industries Inc Holland Mich
Devoe & Raynolds Co Inc Dept A-5 787 First Av N Y 17 N Y p.207
The Flintkote Co 30 Rockefeller Plaza New York 20 N Y
Gibson-Homans Co 2366 Woodhill Rd Cleveland Ohio
Haynes Products Co 4007 Farnam St Omaha 3 Neb
A C Horn Co 43-36 Tenth Long Island N Y
Ideal Cement Co Colorado Portland Div 821 17th St Denver 2 Colo
Johns-Manville Corp Box 290 22 E 40th NY 16 NY p.280, 301, 347, 375
Kay-Tite Co West Orange N J
Keystone Asphalt Products Co 43 E Ohio St Chicago 11 Ill
Koppers Co Inc Tar Products Div Pittsburgh 19 Pa
Lastik Products Co Keenan Bldg Pittsburgh 22 Pa
Louisville Cement Co Inc 315 Guthrie Louisville 2 Ky
Marsh Wall Products Inc 441 Main St Dover Ohio p.283
Mixtite Corp North Haven Conn
Protection Products Mfg Co Kalamazoo 99 Mich p.64
Ranetite Mfg Co Inc 1917 S Broadway St Louis Mo
Sealcon Products Inc Minneapolis 2 Minn
Servicised Products Corp 6051 W 65th St Chicago 38 Ill
Smooth-On Mfg Co 568-574 Communipaw Av Jersey City 4 N J
Standard Dry Wall Products Inc PO Box X New Eagle Pa p.457
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
The Sullivan Co PO Box 2606 Memphis 2 Tenn
Tamms Silica Co 228 N La Salle St Chicago 1 Ill p.449
Tilette Cement Co Inc 401 Lafayette St N Y 3 N Y
Trinity Div General Portland Cement Co 111 W Washington Chgo Ill (white) p.454
Universal Atlas Cement Co U S Steel Corp Sub 135 E 42nd St New York 17 N Y
Webb Products Co San Bernardino Calif
W F Webster Cement Co 224 Thorndike St Cambridge 41 Mass

CHAIN—conveyor

Bridgeport Chain & Mfg Co Bridgeport 1 Conn
Chain Belt Co 1756 W Bruce St Milwaukee 4 Wis
The Cleveland Chain & Mfg Co Cleveland 5 Ohio
Columbus McKinnon Chain Corp Tonawanda N Y
Diamond Chain Co Inc 402 Kentucky Av Dept 450 Indianapolis 7 Ind
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
Gifford-Wood Co Hudson N Y
International Chain & Mfg Co York Pa
Jeffrey Mfg Co 827 N 4th St Columbus 16 Ohio
Link-Belt Co 300 W Pershing Chicago Ill
Newhall Chain Forge & Iron Co 48 W Broadway N Y 7 N Y
Stephens-Adamson Mfg Co Aurora Ill
S G Taylor Chain Co Hammond Ind
Western Chain Co 1807 Belmont Av Chicago 13 Ill

CHAIN—logging & loading

Amer Chain Div Amer Chain & Cable Co Inc York Pa
Bridgeport Chain & Mfg Co Bridgeport Conn
The Cleveland Chain & Mfg Co Cleveland 5 Ohio
Columbus McKinnon Chain Corp Tonawanda N Y
Internat'l Chain & Mfg Co York Pa
Newhall Chain Forge & Iron Co 48 W Broadway N Y 7 N Y
Peerless Chain Co Winona Minn
Prescott Co Menominee Mich
Western Chain Co 1807 W Belmont Av Chicago 13 Ill
White Hill Chain Wks Fieldsboro N J

CHAIN—sash

American Chain & Cable Co Inc Bridgeport 2 Conn
Bridgeport Chain & Mfg Co Bridgeport Conn
Chase Brass & Copper Co 236 Grand St Waterbury 19 Conn
The Cleveland Chain & Mfg Co Cleve- 5 Ohio
P & F Corbin New Britain Conn
Esco Chain Wks 309 E 22nd NY NY
Clinton Hobbs Co Everett Mass
Hodell Chain Co Cooper Av at E 40th St Cleveland 3 O
S Parker Hdwe Mfg Corp 27 Ludlow St NY 2 NY
Peerless Chain Co Winona Minn
Phoenix Hdwe Mfg Co Buffalo NY
Russell Mfg Co Naugatuck Conn
Turner & Seymour Mfg Co Torrington Conn p.161

CHAIN—transom

Bridgeport Chain & Mfg Co Bridgeport 1 Conn
Champion Hdwe Co Geneva O
The Cleveland Chain & Mfg Co Cleveland 5 Ohio
Norwalk Lock Co 395 Broadway NY 11 NY
Russell & Erwin Div The American Hdw Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sargent & Co PO Box 1940 New Haven 9 Conn
Turner & Seymour Mfg Co Torrington Conn p.161

CHAIN DRIVES

Chain Belt Co 1756 W Bruce St Milwaukee 4 Wis
Cullman Wheel Co Inc 1348 Altgeld St Chgo 14 Ill
Diamond Chain Co Inc 402 Kentucky Av Dept 450 Indianapolis 7 Ind
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
Jeffrey Mfg Co 827 N 4th St Columbus 16 Ohio
Link-Belt Co 300 W Pershing Chgo Ill
Morse Chain Co 7601 Central Av Detroit 8 Mich
Northern Conveyor Co Janesville Wis
Prescott Co Menominee Mich
Ramsey Chain Co Albany N Y

CHALK LINES

Cedarberg Mfg Co 545 S 4th St Minneapolis 15 Minn p.254
Cleveland Mill & Power Co Lawnsdale N C
B F Gladding & Co South Otselic N Y
Tennessee Line & Twine Co Elizabethton Tenn
Turner & Stanton Co Norwich Conn

CHAMOIS

American Sponge & Chamois Co 47 Ann St NY 7 NY
Atlantic Sponge & Chamois Corp 49 Walker NY 13 NY
H L Ettman Sponge Co 1908 Olive St St Louis 3 Mo
Florida Sponge & Chamois Co 42 Cliff NY 7 NY
Gulf & West Indies Co 141 Water NY 5 NY
A C Lawrence Leather Co Peabody Mass
Dan Malloy Co Philadelphia 6 Pa
Nassau Sponge Co 124 W Kinzie St Chgo 10 Ill
Robinson Sponge Co 1805 Atlantic Ave Brooklyn 33 N Y
James H Rhodes & Co 157 W Hubbard St Chicago 10
Schroeder & Tremayne Inc 1711 Delmar Blvd St Louis 3 Mo

CHIMNEY TOPS

Adams Co Dubuque Ia
Chicago Fire Brick Co 1461 N Elston Av Chicago 22 Ill
Condensation Engineering Corp 122 S Michigan Av Chgo 3 Ill
Dickey W S Clay Mfg Co 922 Walnut St Kansas City 6 Mo
Gladding McBean & Co 1275 Harrison St San Francisco 3 Calif
Lehigh Sewer Pipe & Tile Co Fort Dodge Iowa
H C Little Burner Co Inc 2nd & Lincoln Sts San Rafael Cal
Northwestern Terra Cotta Co 1750 W Wrightwood Chgo Ill
Penn Supply & Metal Corp 1831 N 5th St Philadelphia 22 Pa
Robinson & Son Sewer Pipe Co Uhrichsville O
Sterling Foundry Co Inc Sterling Ill

CHISELS

Amer Swiss File & Tool Co Elizabeth N J
Baltimore Tool Wks Inc Baltimore Md
Bridgeport Hdwe Mfg Corp Bridgeport Conn
Cincinnati Tool Co Norwood Cincinnati 12 O
Cleveland Steel Tool Co Cleveland O
Cornwell Quality Tools Co Mogadore O
Crescent Tool Co Jamestown NY
Damascus Steel Prod Corp Rockford Ill
Delaware Tool Steel Corp Wilmington 99 Del
C Drew & Co Inc Maple St Kingston Mass
Fairmont Tool & Forging Co 10611 Quincy Av Cleveland Ohio
Greenlee Tool Co 2136 12th St Rockford Ill
Harrold H J Tool Co Columbiana O
Hood Bros 4326 Orchard St Frankford Philadelphia 24 Pa
Leetonia Tool Co Leetonia Ohio
Mayhew Steel Products Inc Shelburne Falls Mass (wood)
Mephisto Tool Co Inc Hudson N Y
Millers Falls Co Greenfield Mass

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Owatonna Tool Co Owatonna Minn
P & C Hand Forged Tool Co Portland 2 Ore
Peck Stow & Wilcox Co Southington Conn
Plomb Tool Co 2209 Santa Fe Av Los Angeles 54 Cal
Rainey-Tools Grove City Pa
Red Devil Tools Irvington 11 N J (glass) p.10
The Stanley Wks New Britain Conn p.253
Vaughan & Bushnell Mfg Co 135 S La Salle Chgo Ill
Vulcan Tool Mfg Co Quincy 69 Mass
Woodings-Verona Tool Wks Verona Pa

CLAMPS—"C"

Adjustable Clamp Co 417 N Ashland Av Chgo 22 Ill
Armstrong Bros Tool Co 317 N Francisco Av Chgo
Batavia Clamp Co Inc 37 Center St Batavia N Y
Black Bros Co Inc Mendota Ill
Cincinnati Tool Co Norwood Cincinnati 12 Ohio
Eberhard Mfg Co Div Eastern Malleable Iron Co Cleveland O
Grand Specialties Co 3101 W Grand Av Chgo Ill
Malleable Iron Fittings Co Branford Conn
Sargent & Co PO Box 1940 New Haven 9 Conn

CLAMPS—carpenter steel bar

Adjustable Clamp Co 417 N Ashland Av Chgo 22 Ill
Black Bros Co Inc Mendota Ill
Cincinnati Tool Co Norwood Cincinnati 12 O
Eberhard Mfg Co Div Eastern Malleable Iron Co Cleveland O
Grand Specialties Co 3101 W Grand Av Chgo Ill
Hartford Clamp Co E Hartford Conn
Malleable Iron Fittings Co Branford Conn
Phoenix Hdwe Mfg Co Buffalo N Y

CLAMPS—concrete form

Adjustable Clamp Co 417 N Ashland Av Chicago 22 Ill
Batavia Clamp Co Inc Batavia N Y
Cincinnati Tool Co Norwood Cincinnati 12 Ohio
M & M Wire Clamp Co 983-17th Av S E Minneapolis 14 Minn
Richmond Screw Anchor Co Inc 816 Liberty Av Brooklyn 8 N Y
Star Extension Products Co Inc 147 Cedar St N Y 6 N Y
Universal Form Clamp Co 1238 N Kostner Chgo 51 Ill
Williams Form Engineering Corp Grand Rapids 7 Mich

CLAMPS—filing

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Crescent Mach Co Leetonia O
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Hanchett Mfg Co Big Rapids Mich
Sargent & Co PO Box 1940 New Haven 9 Conn

CLAMPS—hand screw

Adjustable Clamp Co 417 N Ashland Av Chgo 22 Ill
Armstrong Bros Tool Co 317 N Francisco Av Chgo Ill
Black Bros Co Inc Mendota Ill
Cincinnati Tool Co Norwood Cincinnati 12 Ohio
Eberhard Mfg Co Div Eastern Malleable Iron Co Cleveland O
Hartford Clamp Co E Hartford Conn
Phoenix Hdwe Mfg Co Buffalo N Y

CLAY PRODUCTS

Acme Brick Co Fort Worth 2 Tex
Adel Clay Products Co Des Moines Ia
Agate Sewer Pipe Co Louisville Ky
Brazil Hollow Brick & Tile Co Brazil Ind
Dennison Sewer Pipe Corp 3334 Prospect Av Cleveland 15 O
Gladding McBean & Co 1275 Harrison St San Francisco 3 Calif
Lehigh Sewer Pipe & Tile Co Fort Dodge Iowa
The Robinson Clay Products Co Akron 8 Ohio
Washington Brick & Lime Co Box 2198 Spokane 8 Wash
What Cheer Clay Products Co What Cheer Iowa

CLAY—fire

Acme Brick Co Fort Worth 2 Texas
Curtis Mfg & Asbestos Co 29 Lewis Wharf Boston 10 Mass
Dee Clay Products Co Bloomingdale Ind
Denver Fire Clay Co Denver Colo
General Refractories Co Phil Pa
Gladding-McBean & Co San Francisco Cal
A P Green Fire Brick Co Mexico Mo
Harbison Walker Refractories Co Farmers Bank Bldg Pittsburgh Pa
Laclede-Christy Clay Prods Co St Louis Mo
Lehigh Sewer Pipe & Tile Co Ft Dodge Ia
Mexico Refractories Co Mexico Mo
North American Refractories Co Cleveland 14 O
Plibrico Jointless Firebrick Co 1800 N Kingsbury Chgo 14 Ill
The Robinson Clay Products Co Akron 8 Ohio
Seaboard Refractories Co Perth Amboy N J
United Gilsonite Laboratories Scranton Pa
Washington Brick & Lime Co Box 2198 Spokane 8 Wash
What Cheer Clay Products Co What Cheer Iowa

CLEANER—floor

Boston Varnish Co Boston 49 Mass p.213
E L Bruce Co Memphis Tenn p.307
Cellowax Co 2114 N Charles St Baltimore Md
Chemical Supply Co Plymouth Bldg Cleveland 15 Ohio
Christy Co Inc St Louis 10 Mo (for cement floors)
Franklin Research Co Philadelphia 31 Pa
R M Hollingshead Corp Camden N J
A C Horn Co 43-42 Tenth Long Island City 1 NY
Ideal Industries Inc Sycamore Ill
Industrial Chemical Laboratories Ltd Omaha 2 Neb
International Chemical Co 3140 S Canal St Chicago 16 Ill
J A Meinhardt & Co 2622 S Shields Av Chgo Ill
Oakite Products Inc 22 Thames New York 6 N Y
Penetone Co Tenafly N J
Puritan Chemical Co Atlanta 3 Ga
The Savogran Co 25 Huntington Av Boston 16 Mass
Schalk Chemical Co 351 E 2nd St Los Angeles 12 Calif
Solventol Chem Prods Inc Detroit 8 Mich
L Sonneborn Sons Inc Bld Products Div 88 Lexington Av New York 16 N Y
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo (concrete)
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449

CLEANER—paint brush

Boston Varnish Co Boston 49 Mass p.213
Boyer Chem Lab Co 2706 S Wabash Av Chgo Ill
Boyle-Midway Inc 257 Cornelison Av Jersey City 2 N J p.220
Briggs Maroney Co Inc Everett 49 Mass
Samuel Cabot Inc 2348 Oliver Bldg Boston 9 Mass
Cleveland Cleaner & Paste Co Cleveland 2 Ohio
Glidden Co Cleveland Ohio
J A Meinhardt & Co 2622 S Shields Av Chgo Ill
Patent Cereals Co Geneva NY
Penetone Co Tenafly N J
Pittsburgh Plate Glass Co Baltimore 29 Md p.209
Red Devil Tools Irvington 11 N J (electric) p.10
The Savogran Co 25 Huntington Av Boston 16 Mass
Schalk Chemical Co 351 E 2nd St Los Angeles 12 Cal
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449
United Gilsonite Laboratories Scranton 1 Pa
Vita-Var Corp 46 Albert Av Newark 2 N J

CLEANER—wall paper

Absorene Mfg Co St Louis Mo
Cleveland Cleaner & Paste Co Cleveland 2 O
Climax Industries Inc 2080 W 110 St Cleveland 2 O
Crescent Products Co Terre Haute Ind
Imperial Paper & Color Corp Glens Falls N Y
J A Meinhardt & Co 2622 S Shields Av Chgo Ill
Penetone Co Tenafly New Jersey
Schalk Chemical Co 351 E Second St Los Angeles 12 Calif
Sponge Rubber Prods Co Derby Conn

CLEANER—window

B T Babbitt Inc 386 4th Av New York 16 N Y
Boyle-Midway Inc 257 Cornelison Av Jersey City 2 N J p.220
Chemical Supply Co Plymouth Bldg Cleveland 15 Ohio
Crescent Products Co Terre Haute Ind
J I Holcomb Mfg Co Indianapolis 7 Ind
International Chemical Co 3140 S Canal St Chicago 16 Ill
Oakite Products Inc 22 Thames New York 6 N Y
Penetone Co Tenafly N J
Puritan Chemical Co Atlanta 3 Ga
Standard Industrial Products Inc Box 325 Evansville 4 Ind
L M Thornton Mfg Co 2825 E 18th St Kansas City Mo

CLIPS—concrete

Goldsmith Metal Lath Co 4501 Chickering Av Cincinnati 32 Ohio
Union Steel Prod Co Albion Mich
Wagner Mfg Co Cedar Falls Iowa
Williams Form Engineering Corp Grand Rapids 7 Mich

CLIPS—floor

Bethlehem Steel Co Bethlehem Pa
Knapp Bros Mfg Co Joliet Ill
Merwin Mfg Co Erie Pa
Williams Form Engineering Corp Grand Rapids 7 Mich
Williams Wallace Co San Francisco Cal

CLIPS—glazing for steel sash

Adams Co Dubuque Ia
Copco Steel & Engineering So 14035 Grand River Av Detroit 27 Mich
L F Grammes & Sons Inc 396 Union Allentown Pa
Parker Wire Goods Co Worcester Mass
Sommer Metalcraft Corp Crawfordsville Ind
L A Young Spring & Wire Corp Detroit Mich

CLOTH—hardware

Canvas Specialty Co P O Box 937 Hartford Conn
Clinton Wire Cloth Co Clinton Iowa
Cyclone Fence Div American Steel & Wire Co U S Steel Corp Sub Waukegan 1 Ill
Gilbert & Bennett Mfg Co Blue Island Ill
S Parker Hdwe Mfg Corp 27 Ludlow St N Y 2 N Y
Seneca Wire & Mfg Co Fostoria O
F P Smith Wire & Iron Works Inc 2346 Clybourn Av Chgo 14 Ill
Wickwire Bros Inc Cortland N Y p.254
Wickwire Spencer Steel A Div of Colorado Fuel & Iron Corp 500 Fifth Av New York 18 N Y

CLOTHES DRYERS

The Andal Mfg Co 122 Ash St Akron 8 O
Beh & Co Inc 1150 Broadway New York 1 N Y
Chicago Dryer Co 2210 N Pulaski Road Chicago 39 Ill
Franklin Equipment Co Monticello Iowa
Gem Mfg Co North Girard Pa
Rotary Clothes Dryer Co Inc 840 Lawrence St Allentown Pa
The Southern Galvanizing Co Bush St & B & O RR Baltimore 30 Md (steel, fabricated) p.246
Woodenware Products Corp 122 N 7th St St Louis 1 Mo

CLOTHESLINE—braided fabric

American Phenolic Corp 1830 S 54th Av Cicero 50 Ill (plastic coated)
John H Graham & Co Inc 105 Duane New York 8 N Y

Number after listing indicates page on which advertisement appears

Plymouth Cordage Co No Plymouth Mass
Puritan Cordage Mills Mallison Braided Cord Div Athens Ga
Puritan Cordage Mills 1205 E Washington Louisville 6 Ky p.239
Raucher Mfg Co Inc Norwich Conn
Samson Cordage Works 89 Broad Boston Mass
Silver Lake Co Chattahoochee Ga (not fabric) p.256
Southern Mills Corp Oxford Ala

CLOTHESLINE—wire

Continental Steel Corp Kokomo Ind p.395
Copperweld Steel Co Glassport Pa
F D Kees Mfg Co Beatrice Neb
Walter S Kraus Co 43-10 48th Av Woodside N Y
Mid-States Steel & Wire Co Crawfordsville Ind
Nichols Wire & Aluminum Co Davenport Iowa (aluminum)
Pittsburgh Steel Co Pittsburgh 30 Pa
Wickwire Spencer Steel A Div of The Colorado Fuel & Iron Corp 500 Fifth Av New York 18 N Y

CLOTHESLINE TIGHTENERS

Associated Projects Co Columbus 15 O
F D Kees Mfg Co Beatrice Neb
Sterling Foundry Co Inc Sterling Ill

COAL

Black Star Coal Corp Louisville Ky
Blue Diamond Coal Co Knoxville Tenn
Central Coal & Coke Co Kansas City Mo
Cleveland-Cliffs Iron Co Cleveland 14 Ohio
Clinchfield Coal Corp Dante Va
Colorado Fuel & Iron Corp Denver 1 Colo
Consolidated Coal & Coke Co Denver Colo
Defiance Coal Co Albuquerque N Mex
Delaware Lackawanna & Western Coal Co 120 Broadway NY NY
Intermountain Coal & Lumber Co Elkins W Va
Montana Coal & Iron Co Washoe Mont
Pardee & Curtin Lumber Co Clarksburg W Va
Red Jacket Coal Sales Co 115 E Rich St Columbus 15 O
Stearns Coal & Lumber Co Stearns Ky p.67

COAL CHUTES

Adams Co Dubuque Ia
Allen Steel Products 12911 Hillview Detroit 27 Mich
Chattanooga Implement & Mfg Co Chattanooga 6 Tenn
Copco Steel & Engineering Co 14035 Grand River Av Detroit 27 Mich
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Franklin Equipment Co Monticello Iowa
Fries & Son Covington Ky
Gabriel Steel Co Cat A 13700 Sherwood Detroit 12 Mich p.102-103
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105
Majestic Co 103 Erie St Huntington Ind p.90
Republic Steel Corp Berger Mfg Div Canton 5 Ohio
Southern Wire & Iron Works Atlanta Ga

COLLECTION SERVICE

Lumbermen's Credit Assn Inc Dept AA 608 S Dearborn St Chgo 5 Ill p.490

COLORS—masonry, concrete, mortar, plaster, cement

Alabastine Paint Products Grand Rapids 9 Mich
Blue Ridge Talc Co Inc Henry Va
Ceresit Waterproofing Corp 512 S Canal Chgo 7 Ill
Clinton Metallic Paint Co Clinton NY
Colorcrete Industries Inc Holland Mich
Ewing M Fox Co 240 E 136th St N Y N Y
Geo C Gordon Chemical Co Kansas City Mo
Mineral Pigments Corp Muirkirk Md
Pecora Paint Co Inc American & Venango Sts Philadelphia 40 Pa
Ricketson Mineral Color Wks Milwaukee Wis
Sealcon Prod Inc 927 Second Av S Minneapolis 2 Minn
Smith Chem & Color Co Inc 55 John Brooklyn 1 NY
Geo B Smith Chemical Works Maple Park Ill
L Sonneborn Sons Inc 88 Lexington Ave New York 16 N Y
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449
Washington Brick & Lime Co Box 2198 Spokane 8 Wash

COLORS—paint

Blue Ridge Talc Co Inc Henry Va
Samuel Cabot Inc 2348 Oliver Bldg Boston 9 Mass
Carpenter-Morton & Co 77 Sudbury Boston Mass
Devoe & Raynolds Co Inc 787 First Av NY 17 NY p.207
E I du Pont de Nemours & Co Inc Wilmington 98 Del
Lowe Bros Co 424 E 3rd St Dayton 2 O p.217
Martin-Senour Co 2502 S Quarry St Chicago 8 Ill
Pittsburgh Plate Glass Co Pittsburgh 22 Pa p.209
Pratt & Lambert Inc 75 Tonawanda St Buffalo 7 NY
Sherwin-Williams Co 101 Prospect Av NW Cleveland Ohio
Smith Chemical & Color Co Inc 55 John Brooklyn 1 NY
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449

COLUMNS—built-up wood

Curtis Companies Inc Clinton Ia
Mutual Fir Column Co Tacoma Wash
Pacific Mutual Door Co Tacoma Wash
Washington Mfg Co P O Box 1544 Tacoma 1 Wash

CONCRETE AGGREGATES—vermiculite

Acme Asbestos Covering & Flooring Co 246 N Elizabeth Chgo 7 Ill
The Sullivan Co PO Box 2606 Memphis 2 Tenn
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449
Zonolite Co Dept ALM-49 135 S La Salle St Chicago 3 Ill p.363

CONCRETE BLOCK MACHINES

Besser Mfg Co Alpena Mich
Brickmaster 2207 Richmond Terrace Staten Island N Y
Colorcrete Industries Inc Holland Mich
Dunn W E Mfg Co Holland Mich
Kent Mach 115 Portage Trail Cuyahoga Falls O
Lith-I-Bar Holland Mich p.485
Multiplex Concrete Mach Co Elmore O
R S Reed Corp Three Rivers Mich
Stearns Mfg Co Adrian Mich

CONCRETE CURING COMPOUND

Adensite Co Inc 37-19 23rd Long Island City N Y
Anti Hydro Waterproofing Co Newark 8 N J
Ceresit Waterproofing Corp 512 S Canal Chicago 7 Ill
Devoe & Raynolds Co Inc Dept A-5 787 First Av N Y 17 N Y p.207
The Dow Chemical Co Midland Mich
Fort Pitt Chem Co 26th & Smallman St Pittsburgh 22 Pa
Horn A C Co 43-42 10th Long Island City N Y
Keystone Asphalt Products Co 43 E Ohio St Chicago 11 Ill
Ranetite Mfg Co Inc 1917 S Broadway St Louis Mo
Republic Creosoting Co Merchants Bank Bldg Indianapolis 4 Ind
The Richkraft Co 228 N La Salle Chicago 1 Ill p.341
Sealcon Prod Inc 927 Second Av S Minneapolis 2 Minn
Solvay Sales Div Allied Chemical & Dye Corp 40 Rector St NY 6 NY
L Sonneborn Sons Inc 88 Lexington Av NY 16 NY

CONCRETE CURING PAPER

Angier Corp Framingham Mass
Keystone Asphalt Products Co 43 E Ohio St Chicago 11 Ill
Protective Papers Inc Union Ill p.354
Richkraft Co 228 N La Salle Chicago 1 Ill p.341
Sisalkraft Co Dept AL 205 W Wacker Drive Chicgao 6 Ill p.335

CONCRETE FLOOR RESURFACER

Acme Asbestos Covering & Flooring Co 246 N Elizabeth Chgo 7 Ill
Ceresit Waterproofing Corp 512 S Canal Chgo 7 Ill
Haynes Products Co 4007 Farnam Omaha 3 Neb
Smooth-On Mfg Co 568-574 Communipaw Av Jersey City 4 NJ
L Sonneborn Sons Inc 88 Lexington Ave New York 16 NY
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Stonhard Co 1306 Spring Garden St Philadelphia 23 Pa
The Sullivan Co PO Box 2606 Memphis 2 Tenn
Vita-Var Corp 46 Albert Av Newark 2 NJ

CONCRETE FORMS

Commercial Shearing & Stamping Inc 5767 W 65th St Chicago 38 Ill
Goldsmith Metal Lath Co 4501 Chickering Av Cincinnati 32 Ohio
Heltzel Steel Form & Iron Co Warren Ohio
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Universal Form Clamp Co 1238 N Kostner Av Chicago 51 Ill
Williams Form Engineering Corp Grand Rapids 7 Mich

CONCRETE HARDENER

Adensite Co Inc 37-19 23rd St Long Island City N Y
American Fluresit Co Cincinnati 29 O
Anti Hydro Waterproofing Co 265 Badger Av Newark 8 NJ
Blue Ridge Talc Co Inc Henry Va
Celadri Corp 652 Willis Av Williston Park NY
Ceresit Waterproofing Corp 512 S Canal Chgo 7 Ill
The Dow Chemical Co Midland Mich
Devoe & Raynolds Co Inc Dept A-5 787 First Av N Y 17 N Y p.207
Fort Pitt Chem Co 26th & Smallman St Pittsburgh 22 Pa
Harrop Chemical Co 135 Hoboken Av Jersey City 2 N J
Haynes Products Co 4007 Farnam St Omaha 3 Neb
Horn A C Co 43-42 Tenth St Long Island City N Y
Kay-Tite Co West Orange NJ
Puritan Chemical Co Atlanta 3 Ga
L Sonneborn Sons Inc 88 Lexington Av NY 16 NY
Standard Dry Wall Products Inc PO Box X New Eagle Pa p.457
Steelcote Mfg Co 3418 Gratiot St Louis 3 Mo
The Sullivan Co P O Box 2606 Memphis 2 Tenn
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449
Truscon Labs Detroit Mich
Weather Seal Co 10 E Pearl St Cincinnati 2 Ohio

CONVEYORS—chain link & chain belt

Allington & Curtis Mfg Co Saginaw Mich
American Mfg Co Inc Tacoma 2 Wash
The C O Bartlett & Snow Co 6200 Harvard Av Cleveland 5 Ohio
Chain Belt Co 1756 W Bruce St Milwaukee 4 Wis
Corley Mfg Co Chattanooga 1 Tenn
Gifford-Wood Co Hudson N Y
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
Jeffrey Mfg Co 827 N 4th St Columbus 16 O
Lamson Corp Syracuse 1 N Y
Link Belt Co 300 W Pershing Chgo Ill
Mathews Conveyer Co Ellwood City Pa
Northern Conveyor Co Janesville Wis

Number after listing indicates page on which advertisement appears

CONVEYORS—gravity roller

Bonded Scale & Machine Co 19 Belleview Av Columbus 7 O
Equipment Engineering Co St Charles Ill
A B Farquhar Co York Pa
Lamson Corp Syracuse 1 N Y
Logan Co Inc Louisville Ky
Lyon Metal Products Inc Aurora Ill
Mathews Conveyor Co Ellwood City Pa
Rapids-Standard Co Inc 83 Rapistan Bldg Grand Rapids 2 Mich p.481
St Paul Fdry & Mfg Co St Paul 3 Minn
Standard Conveyor Co N St Paul 9 Minn

CONVEYORS—gravity wheel

Logan Co Inc Louisville 6 Ky
Mathews Conveyor Co Ellwood City Pa
Morse Metal Products Co 295 E 2nd St New York 9 N Y
Rapids-Standard Co Inc 83 Rapistan Bldg Grand Rapids 2 Mich p.481
Standard Conveyor Co North St Paul 9 Minn
St Paul Fdry & Mfg Co St Paul 3 Minn

CONVEYORS—overhead

Cleveland Crane & Engineering Co 5866 E 283rd St Wickliffe O
Godfrey Conveyor Co Elkhart Ind
Lamson Corp Syracuse 1 N Y
Link-Belt Co 300 W Pershing Rd Chgo 9 Ill
Louden Mchy Co Fairfield Ia
Mathews Conveyor Co Ellwood City Pa
The Ney Mfg Co 948 High Av S W Canton 4 Ohio
Northern Conveyor Co Janesville Wis
Richards-Wilcox Mfg Co Aurora Ill p.249

CONVEYORS—portable belt

Atlas Conveyor Co Clintonville Wis
Barber-Greene Co Aurora Ill
Equipment Engineering Co St Charles Ill
Fairfield Eng Co Marion O
Godfrey Conveyor Co Elkhart Ind
Lamson Corp Syracuse 1 N Y
Link Belt Co 300 W Pershing Chgo Ill
Northern Conveyor Co Janesville Wis
Rapids-Standard Co Inc 83 Rapistan Bldg Grand Rapids 2 Mich p.481
St Paul Fdry & Mfg Co St Paul 3 Minn
Standard Conveyor Co North St Paul 9 Minn

CONVEYORS—portable bucket

Barber-Greene Co Aurora Ill
Fairfield Eng Co Marion O
George Haiss Mfg Co Inc 381 Canal Place Bronx 51 N Y N Y
Link Belt Co 300 W Pershing Chgo Ill

CONVEYORS—portable flight

Atlas Conveyor Co Clintonville Wis
Barber-Greene Co Aurora Ill
Equipment Engineering Co St Charles Ill
Fairfield Eng Co Marion O
A B Farquhar Co York Pa
Godfrey Conveyor Co Elkhart Ind
George Haiss Mfg Co Inc 381 Canal Place Bronx N Y C 51 N Y
Link Belt Co 300 W Pershing Chgo Ill
Northern Conveyor Co Janesville Wis

CONVEYORS—slab

The C O Bartlett & Snow Co 6200 Harvard Av Cleveland 5 Ohio
Chain Belt Co Milwaukee 4 Wis
Corinth Machinery Co Corinth Miss
Corley Mfg Co Chattanooga 1 Tenn
Cunningham Mchy Co 735 Ricou St Shreveport La p.487
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
Jeffrey Mfg Co 827 N 4th St Columbus 16 O
Link Belt Co 300 W Pershing Chgo Ill
Rapids-Standard Co 83 Rapistan Bldg Grand Rapids 2 Mich p.481
Stephens-Adamson Mfg Co Aurora Ill
The Wheland Co Chattanooga 2 Tenn

CORD—sash

John H Graham & Co Inc 105 Duane NY 8 NY
Highland Cordage Co Hickory N C
Hoffman Lion Mills Co Inc Fall River Mass
Hooper Wm E & Sons Co Phil Pa
Puritan Cordage Mills Mallison Braided Cord Div Athens Ga
Puritan Cordage Mills 1205 E Washington Louisville 6 Ky p.239
Samson Cordage Works 89 Broad Boston 10 Mass
Silver Lake Co Chattahoochee Ga p.256
Southern Mills Corp Oxford Ala
Whittier Mills Co Chattahoochee Ga

CORD—sash, wire

John A Roebling's Sons Co Trenton N J
Upson-Walton Co Cleveland O

CORD—venetian blind

Archer A W Co Inc 100 Worth NY NY
The Astrup Co 2937 W 25th St Cleveland 13 Ohio
J E Fricke Co 40 N Front St Philadelphia 6 Pa
John H Graham & Co Inc 105 Duane St New York 8 N Y
Raucher Mfg Co Inc Norwich Conn
Samson Cordage Works 89 Broad St Boston 10 Mass

CORN CRIBS

E S Gaynor Lumber Co Sioux City Iowa
Illinois Wire & Mfg Co P O Box 1396 Joliet Ill p.399, 402
William Kelley-Lumber 735 N Water St Milwaukee 2 Wis
Mattsen Wire & Mfg Co Inc Joliet Ill
Midwest Steel Products Co Kansas City Mo (steel)
Nebraska Bridge Supply & Lumber Co Omaha 5 Neb
Rilco Laminated Products Inc 2680 First Natl Bank Bldg St Paul 1 Minn p.38
Rowe Mfg Co Galesburg Ill
Wheeler-Arnold Co Wittenberg Wis

CORNER BEAD

Alabama Metal Lath Co Birmingham Ala p.449
Bayonne Steel Products Co Newark N J
The Bostwick Steel Lath Co Niles Ohio p.436-437
Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Continental Steel Corp Kokomo Ind p.395
Goldsmith Metal Lath Co Cincinnati 32 O
Inland Steel Products Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446-447
Mecklenburg - Duncan Co Oklahoma City 1 Okla p.157, 262
National Gypsum Co Buffalo 2 N Y p.298-299
Penn Metal Co Inc 205 E 42nd St NY 17 NY p.442-443
Penn Supply & Metal Corp 1831 N 5th St Philadelphia 22 Pa
St Paul Corrugating Co St Paul 1 Minn
Truscon Steel Co Youngstown 1 O
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293
Williams-Wallace Co San Francisco 7 Calif

CORNERS—building

Allen Steel Products 12911 Hillview Detroit 27 Mich
Bugher Mfg Co Kokomo Ind
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Inland Steel Products Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446-447
Klauer Mfg Co Dubuque Ia
La Crosse Steel Roofing & Corrugating Co La Crosse Wis
Merwin Mfg Co Erie Pa
Penn Supply & Metal Corp Phila 22 Pa

COUNTER TOPS

Bradley Lumber Co of Arkansas Warren Ark p.48
Congoleum-Nairn Inc Kearny N J
Engineered Plywood Products Co PO Box 1326 Tacoma Wash
General Wood Works Council Bluffs Ia
The B F Goodrich Co Akron Ohio (rubber)
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
I-XL Furniture Co Inc Goshen Ind
Just Mfg Co 4610 W 21st St Chicago 50 Ill (stainless steel)
Marsh Wall Products Inc 441 Main St Dover Ohio p.283
The Mengel Co Inc Louisville 1 Ky p.13, 181
Roddis Plywood Corp Marshfield Wis p.68
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
United States Plywood Corp 55 W 44th New York 18 N Y p.13, 181, 220, 257

COUNTERS—store & display

Bulman E O Mfg Co Inc Grand Rapids Mich
Dyke Bros Little Rock Ark p.192
Engineering Plywood Products Co PO Box 1326 Tacoma Wash
Equipto Div of Aurora Equipment Co Aurora Ill
General Wood Works Council Bluffs Ia
Grand Rapids Store Equipment Co Grand Rapids Mich
W C Heller & Co Cat #40A 1050 Bryant St Montpelier Ohio p.468
Reflector Hdwe Corp Western Av & 22nd Pl Chgo Ill
Universal Steel Equipment Corp 135 W 23rd NY NY
J D Warren Mfg Co Montpelier Ohio

COUPLINGS—flexible shaft

Brad Foote Gear Wks Inc Cicero Ill
Chain Belt Co 1756 W Bruce St Milwaukee 4 Wis
Cullman Wheel Co Inc 1348 Altgeld St Chgo 14 Ill
Diamond Chain Co Inc 402 Kentucky Av Dept 450 Indianapolis 7 Ind
Falk Corp Milwaukee Wis
Link Belt Co 300 W Pershing Chgo Ill
Lovejoy Flexible Coupling Co 5001 W Lake Chgo 44 Ill
Morse Chain Co 7601 Central Av Detroit 8 Mich

CRANES—overhead traveling

American Bridge Co U S Steel Corp Sub Frick Bldg Pittsburgh 19 Pa
Bridgeport Chain & Mfg Co Bridgeport 1 Conn
Chisholm Moore Hoist Corp Tonawanda N Y
Cleveland Crane & Engineering Co Wickliffe O
Detroit Hoist & Machine Co 8201 Morrow St Detroit 11 Mich
Lane Mfg Co Montpelier Vermont
Louden Machinery Co Fairfield Ia
Reading Chain & Block Corp 2100 Adams St Reading Pa
Richards-Wilcox Mfg Co Aurora Ill p.249
Shaw-Box Crane & Hoist Div Manning, Maxwell & Moore Inc Muskegon Mich
Shepard Niles Crane & Hoist Co Montour Falls N Y

CRANES—power industrial

American Hoist & Derrick Co 63 S Robert St St Paul 1 Minn
Hyster Co Portland 8 Ore & Peoria 1 Ill
Koehring Co 3026 W Concordia Av Milwaukee 10 Wis
Lewis-Shepard Products Inc 236 Walnut St Watertown 72 Mass
The Ross Carrier Co Benton Harbor Mich p.470
Shepard Niles Crane & Hoist Corp Montour Falls N Y
Silent Hoist & Crane Co 860 63rd Brooklyn 20 N Y p.482
Washington Iron Works Seattle 4 Wash

CRANES—tractor & truck

Clyde Iron Works Inc Duluth 1 Minn
Hyster Co Portland 8 Ore & Peoria 1 Ill
Koehring Co 3026 W Concordia Av Milwaukee 10 Wis

Number after listing indicates page on which advertisement appears

Silent Hoist & Crane Co 800 63rd Brooklyn 20 N Y p.482
Stimmel Winch Co 37-24 33rd St Long Island City 1 N Y
Taylor Machine Works Louisville Miss

CRAYONS—lumber marking

American Crayon Co Sandusky O
Blaisdell Pencil Co Phila Pa
Eagle Pencil Co 703 E 13th New York 9 N Y
Jos Dixon Crucible Co Jersey City N J
Markal Co 607-R N Western Av Chicago 12 Ill
National Crayon Co Easton Pa
Standard Crayon Mfg Co Danvers Mass
Union Crayon Co Lowell Mass

CREDIT INFORMATION

Lumbermen's Credit Assn Inc Dept AA 608 S Dearborn Chgo Ill p.499

CUTTER HEADS

Samuel J Shimer & Sons Inc 10 Race St Milton Pa p.490

CUTTERS—asbestos shingle

Keasbey & Mattison Co Ambler Pa p.325
Specialty Tool Manufacturers Belleville Ill

CUTTERS—glass

Wm L Barrett Co 34 School St Bristol Conn
Fletcher-Terry Co South St Forestville Conn p.256, 277, 320
Glaziers Tool Mfg Corp 611 W Adams Chgo Ill
W C Heller & Co Cat #40A 1050 Bryant St Montpelier Ohio p.468
E Karelsen Inc 125 W 45th St NY 19 NY
Millers Falls Co Greenfield Mass
New England Carbide Tool Co Inc 60 Brookline St Cambridge 39 Mass
Red Devil Tools Irvington 11 N J p.10
Ridgely Trimmer Co Springfield Ohio

CUTTERS—insulation board

Kimball Mfg Co Inc 1633 Sycamore Royal Oak Mich

CUTTERS—lock corner

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Huther Bros Saw Mfg Co Inc 1290 University Av Rochester 7 N Y p.486
S A Woods Machine Co Boston 27 Mass

CUTTERS—moulding

Ekstrom Carlson & Co Rockford Ill
Samuel J Shimer & Sons Inc 10 Race St Milton Pa p.490
Stanley Electric Tools New Britain Conn p.253
Taylor-Stiles & Co Riegelsville N J p.488
S A Woods Machine Co Boston 27 Mass

CUTTERS—picket

H A Schubert Co 1210 Washington Av Wilmette Ill p.490

DAMPERS—fireplace

Adams Co Dubuque Ia
Allen Steel Products 12911 Hillview Detroit 27 Mich
Bennett-Ireland 449 Pine St Norwich N Y p.386
Chattanooga Implement & Mfg Co Chattanooga 6 Tenn
Colonial Fireplace Co 540 N Cicero Av Chgo 44 Ill
H W Covert Co 339 E 48th St NY 17 NY
The Donley Bros Co 1392S Miles Av Cleveland 5 Ohio p.111-134
Gabriel Steel Co Cat A 13700 Sherwood Detroit 12 Mich p.102-103
S M Howes Inc P O Box 1 Fall River Mass
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105
Majestic Co 103 Erie St Huntington Ind p.90
Peerless Mfg Corp Louisville Ky
Price Fireplace Heater & Tank Corp 93 Austin St Buffalo 7 N Y p.388-389
Superior Fireplace Co 1709-D East 15th St Los Angeles Cal and 601-X North Point Road Baltimore 6 Md p.385

DECALCOMANIA TRANSFERS

Chicago Decalcomania Co 3310 Elston Av Chicago 18 Ill
Palm Bros Decalcomania Co 3716 Regent Av Cincinnati 12 Ohio

DIFFERENTIALS—automatic locking, truck axles

Detroit Automotive Products Corp 8701 Grinnell Av Detroit 13 Mich
Truckstell Mfg Co Union Commerce Bldg Cleveland 14 Ohio

DIPPING VATS—lumber

The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
Johnson & Carlson 848 W Eastman Chgo 22 Ill
Richmond Engineering Co Inc Richmond Va
The Wheland Co Chattanooga 2 Tenn

DISHWASHERS—electric

Apex Rotarex Corp Cleveland Ohio
Hotpoint Inc 5600 W Taylor St Chicago 44 Ill
Jackson Dishwasher Co Cleveland Ohio

DOLLIES

The Fairbanks Co 393 Lafayette St New York 3 N Y
Hamilton Caster & Mfg Co Hamilton O
Howe Scale Co Rutland Vermont
Morse Metal Products Co Inc 295 E 2nd St New York 9 N Y
Nutting Truck & Caster 2201 Division St Faribault Minn

DOOR BELLS & CHIMES

P & F Corbin New Britain Conn (bells only)
J C Deagan Inc 1770 W Berteau Av Chgo Ill
Edwards & Co Inc Norwalk Conn
John H Graham & Co Inc 105 Duane Ave New York 8 N Y
Nutone Inc Rm 1451 Merchandise Mart Chicago 54 Ill (chimes only)
The A E Rittenhouse Co Inc Honeoye Falls N Y (electric chimes)
Russell & Erwin Div The American Hdw Corp New Britain Conn (bells only) p.241
Starr Bros Bell Co East Hampton Conn

DOOR BOTTOMS—automatic

Dorbin Metal Strip Mfg Co. 2408 S Cicero Ave Chicago 50 Ill
Macklanburg - Duncan Co Oklahoma City Okla p.157, 262
Monarch Metal Weatherstrip Corp St Louis Mo
Thermal Co Philadelphia 19 Pa

DOOR CHECKS

Barrows Lock Wks 24th & Commonwealth Av North Chicago Ill
P & F Corbin New Britian Conn
Frantz Mfg Co Sterling Ill p.410
Kant Slam Door Check Co Bloomfield Ind
Lockwood Hardware Mfg Co 35 Daniels St Fitchburg Mass p.243
Newell Mfg Co Lowell Mich
Norton Door Closer Co 2900 N Western Av Chgo 18 Ill
S Parker Hardware Mfg Co 27 Ludlow New York 2 N Y
Reading Hdwe Corp Reading Pa
Russell & Erwin Div The American Hdw Corp New Britain Conn p.241
Sager Lock Wks North Chicago Ill
Sargent & Co PO Box 1940 New Haven 9 Conn
Segal Lock & Hdwe Co Inc 395 Broadway NY 13 NY
Wagner Mfg Co Cedar Falls Iowa
Yale & Towne Mfg Co Stamford Conn p.222, 604

DOOR CLOSERS

Barrows Lock Wks 24th & Commonwealth Av North Chicago Ill
Chicago Spring Hinge Co 1500 Carroll Av Chgo 7 Ill
P & F Corbin New Britain Conn
The Eagle Lock Co Terryville Conn p.232-233
Lockwood Hdwe Mfg Co Fitchburg Mass p.243
Newell Mfg Co Lowell Mich
Norton Door Closer Co 2900 N Western Av Chgo 18 Ill
S Parker Hardware Mfg Co 27 Ludlow New York 2 N Y
Reading Hardware Corp Reading Pa
Richards-Wilcox Mfg Co Aurora Ill p.249
Russell & Erwin Div The American Hdw Corp New Britain Conn p.241
Sager Lock Wks North Chicago Ill
Sargent & Co PO Box 1940 New Haven 9 Conn
Segal Lock & Hdwe Co Inc 395 Broadway NY 13 NY
Shelby Spring Hinge Co Shelby Ohio
Yale & Towne Mfg Co Stamford Conn p.222, 604

DOOR DISPLAY STANDS

American Woodworking Co 1658 N Lowell Av Chgo 39 Ill
Ken-Ro-Bil Corp Van Buren Ohio p.102

DOOR FRAMES—metal

Aetna Steel Products Corp 61 Broadway N Y 6 N Y (steel) p.179
Fries & Son Covington Ky
Hope's Windows Inc Jamestown NY
Kawneer Co Niles Mich
Mesker Bros Sales Div 4344 Geraldine St Louis 15 Mo p.172-173
Metal Crafters Division Castone Products Co Cedar Rapids Iowa p.110
National Kalamein Co Inc 418 Lexington Ave Brooklyn 21 N Y
Southern Wire & Iron Works 441 Memorial Drive S E Atlanta Ga
Steelcraft Mfg Co 9050 Blue Ash Rd Rossmoyne O
Williamsburg Steel Products Co 86 Quay St Brooklyn 22 N Y
Wollaeger Steel Corp 61 Broadway NY 6 NY p.198

DOOR FRAMES—wood

Andersen Corp Bayport Minn p.150-151
American Sash & Door Co Kansas City 1 Mo
Biles-Coleman Lbr Co Inc Omak Wash p.194
Bradley Lumber Co of Arkansas Warren Ark p.48
Carr Adams & Collier Dubuque Ia p.147
Cole Mfg Co P O Box 2657 Memphis 2 Tenn p.192
Crossett Lbr Co Crossett Ark
Curtis Companies Inc Clinton Ia
Deer Park Pine Industry Inc Deer Park Wash
Dierks Lbr & Coal Co Dierks Bldg 1006 Grand Av Kansas City 6 Mo p.322
Farley & Loetscher Mfg Co Dubuque Iowa
Fordyce Lumber Co Fordyce Ark p.313
Hoosier Sash & Door Co Anderson Ind p.194
Huttig Mfg Co Dept AL Muscatine Ia p.171
Huttig Sash & Door Co 1206 Vandeventer Av St Louis 10 Mo
Ideal Co Box 889 Waco Tex
Keystone Frame & Mfg Co Spokane 3 Wash
Kinzua Pine Mills Co Kinzua Ore p.17
The Long-Bell Lumber Co R A Long Bldg Kansas City 6 Mo and Longview Wash
M & M Wood Working Co Resnprest Div 2301 N Columbia Portland 3 Ore
Malta Mfg Co Malta O p.153
Marquart Millwork Co Oshkosh Wis p.148
Millwork Distributors 2 N Kresson St Baltimore 24 Md p.188
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
National Screen Door Co Birmingham 3 Ala
Northwest Door & Plywood Sales Tacoma 1 Wash
Pacific Mutual Door Co Tacoma Wash
Roach & Musser Co Muscatine Ia p.191
Rock Island Sash & Door Wks Rock Island Ill
Roddis Plywood Corp Marshfield Wis p.68
Geo Silbernagel & Sons Co Wausau Wis
Southern Lbr Co Warren Ark
Spokane Pine Prod Co Spokane Wash
Washington Mfg Co P O Box 1544 Tacoma Wash
Weyerhaeuser Sales Co St Paul Minn p.62-63
The Wheeler Osgood Co Tacoma 1 Wash p.141
White Pine Sash Co Spokane Wash

DOOR GUARDS

Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Cincinnati Iron Fence Co Inc 2110 Florence Av Cincinnati 6 Ohio
Columbus Brass Mfg Co 620 Dublin Av Columbus 16 Ohio
Erco Mfg Co 2368 N Elston Chgo 14 Ill
J W Fiske Iron Works 78 Park Pl New York 7 N Y

Number after listing indicates page on which advertisement appears

Fiwale Equipment Mfg Co 165 Church St New York 7 N Y
H B Ives Co New Haven 8 Conn
F D Kees Mfg Co Beatrice Neb
Logan Co Inc Louisville Ky
Macklanburg - Duncan Co Oklahoma City Okla p.157, 262
Geo L Mesker Steel Corp Evansville Ind
Metal Crafters Division Castone Products Co Cedar Rapids Iowa p.110
F B Smith Wire & Iron Works Inc 2346 N Clybourn Av Chicago 14 Ill
Southern Wire & Iron Works 441 Memorial Drive S E Atlanta Ga
The Stanley Wks New Britain Conn p.253

DOOR KNOCKERS

Barrows Lock Works 24th & Commonwealth Av North Chicago Ill
J Chesler & Sons 41 Varick Av Brooklyn N Y
P & F Corbin New Britian Conn
Erco Mfg Co 2368 N Elston Av Chgo 14 Ill
H B Ives Co New Haven 8 Conn
Lockwood Hardware Mfg Co Fitchburg Mass p.243
McKinney Mfg Co Pittsburgh 12 Pa p.229
Norwalk Lock Co 395 Broadway NY 13 NY
S Parker Hardware Mfg Corp 27 Ludlow St New York 2 N Y
Peabody-Acker Inc 5816 Hooper Av Los Angeles Calif
Russell & Erwin Div The American Hdw Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sager Lock Works North Chicago Ill
Sargent & Co PO Box 1940 New Haven 9 Conn
Duncan Shaw Corp 33 W 42nd St NY 18 NY
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Standard Bronze Co Bayonne S N J p.255

DOOR STOPS

Barrows Lock Works 24th & Commonwealth Av North Chicago Ill
A G Busch & Co Inc 2632 N Central Chgo 39 Ill
P & F Corbin New Britian Conn
Frantz Mfg Co Sterling Ill p.410
H B Ives Co New Haven 8 Conn
Lockwood Hardware Mfg Co 35 Daniels St Fitchburg Mass p.243
Miami Cabinet Div Philip Carey Mfg Co Middletown Ohio
Newell Mfg Co Lowell Mich
The Ney Mfg Co 948 High Av S W Canton 4 Ohio (sliding door)
S Parker Hardware Mfg Co 27 Ludlow New York 2 N Y
Peabody Acker Inc 5816 Hooper Av Los Angeles Calif
Penn Hardware Co Reading Pa
Phoenix Hardware Mfg Co Buffalo N Y
Russell & Erwin Div The American Hdw Corp New Britain Conn p.241
Safe Padlock & Hardware Co Lancaster Pa
Sager Lock Works North Chicago Ill
Sargent & Co PO Box 1940 New Haven 9 Conn
Sharon Hdwe Mfg Co Sharon Pa
Slaymaker Lock Co Cat 376A Lancaster Pa p252
Standard Bronze Co Bayonne S NJ p.255
Starline Inc Harvard Ill
Sterling Foundry Co Inc Sterling Ill
Wagner Mfg Co Cedar Falls Iowa

DOORS—access

Adams Co Dubuque Ia
Carr Adams & Collier Co Dubuque Iowa p.147
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Fries & Son Covington Ky
Industrial Iron Works 6011 S W Macadam Av Portland 1 Ore
Inland Steel Products Co (formerly Milcor Steel Co.) 4027 W Burnham St Milwaukee 1 Wis p.446-447
Knapp Bros Mfg Co Joliet Ill
Loxit Moulding Co 1217 W Washington Blvd Chicago 7 Ill
Miami Cabinet Div of Philip Carey Co Middletown O
Morgan Co Oshkosh Wis
Rock Island Sash & Door Wks Rock Island Ill

DOORS—accordion

Morgan Co Oshkosh Wis
New Castle Porducts Inc New Castle Ind
Richards-Wilcox Mfg Co Aurora Ill p.249
F P Smith Wire & Iron Wks Inc 2346 Clybourn Av Chgo 14 Ill
Truscon Steel Co Youngstown 1 Ohio

DOORS—ash pit & clean-out

Adams Co Dubuque Ia
Allen Steel Products 12911 Hillview Detroit 27 Mich
Bennett-Ireland 449 Pine St Norwich N Y p.386
Chattanooga Implement & Mfg Co Chattanooga 6 Tenn
Colonial Fireplace Co 540 N Cicero Av Chicago 44 Ill
Copco Steel & Engineering Co 14035 Grand River Av Detroit 27 Mich
H W Covert Co 339 E 48th NY 17 NY
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Eastern Connecticut Welding Corp New London Conn
Gabriel Steel Co Cat A 13700 Sherwood Detroit 12 Mich p.102-103
S M Howes Inc P O Box 1 Fall River Mass
Industrial Iron Wks 6011 S W Macadam Av Portland 1 Ore
Inland Steel Products Co. (formerly Milcor Steel Co) 4027 Burnham St Milwaukee 1 Wis p.446-447
Majestic Co 103 Erie St Huntington Ind p.90
Peerless Mfg Co Louisville Ky
Portland Stove Fdry Co Portland Maine
Price Fireplace Heater & Tank Corp 93 Austin St Buffalo 7 N Y p.388-389
Sterling Foundry Co Inc Sterling Ill
Superior Fireplace Co 1709-D E 15th St Los Angeles 21 Cal and 601-X North Point Road Baltimore 6 Md p.385
U S Hdwe & Mfg Co Pawtucket R I
Western Fdry Co 2400 S W Water Av Portland 1 Ore
Wheeling Corrugating Co Wheeling W Va p.441

DOORS—coal

Adams Co Dubuque Ia
Consolidated Expanded Metal Cos Wheeling W Va p.441
Copco Steel & Engineering Co 14035 Grand River Av Detroit 27 Mich
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Fries & Son Covington Ky
Industrial Iron Wks 6011 S W Macadam Av Portland 1 Ore
Majestic Co 103 Erie St Huntington Ind p.90
Peerless Mfg Corp Louisville 10 Ky
U S Gypsum Co 300 W Adams St Chicago 6 Ill p.203
Wheeling Corrugating Co Wheeling W Va p.441

DOORS—combination

Combination Door Co Fond Du Lac Wis
Compo-Miracle Products Co Berkeley Mich
Continental Screen Co 1249 Washington Blvd Detroit 26 Mich p.136
Curtis Cos Inc Clinton Ia
Farley & Loetscher Mfg Co Dubuque Ia
Fiddes-Moore & Co 205 W Wacker Dr Chicago Ill p.56
Huttig Mfg Co Box AL Muscatine Ia. p.171
Kane Mfg Corp Kane Pa
Marquart Millwork Co Oshkosh Wis p.148
Millwork Distributors Co 2 N Kresson St Baltimore 24 Md p.188
Morgan Co Oshkosh Wis
National Screen Co Inc Suffolk Va.
Northwest Door & Plywood Sales Tacoma 1 Wash
Pacific Mutual Door Co Tacoma Wash
Phenix Mfg Co 4129 N Port Washington Rd Milwaukee 12 Wis p.411
Roach & Musser Co Muscatine Ia p.191
Robbins Mfg Co Dept 122 1801 N Central Park Av Chicago 47 Ill p.196
F E Schumacher Co Hartville Ohio
Geo Silbernagel & Sons Co Wausau Wis
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
Smalley Products Co Groton Conn
White Pine Sash Co Spokane Wash

DOORS—Dry kiln

Moore Dry Kiln Co P O Box 4248 Jacksonville 1 Fla p.65
Standard Dry Kiln Co Indianapolis Ind

DOORS—fire

Edwards Mfg Co 427 Culvert St Cincinnati 2 Ohio
Harris Preble Fire Doors Inc 4608 W 20th Cicero 50 Ill
Majestic Co 103 Erie St Huntington Ind p.90
Mesker Bros Sales Div 4344 Geraldine St Louis 15 Mo p.172-173
The Mengel Co Inc Louisville 1 Ky p.13, 181
Richards-Wilcox Mfg Co Aurora Ill p.249
Roddis Plywood Corp Marshfield Wis p.68
St Louis Fire Door Co St Louis Mo
Soule Steel Co 1750 Army St San Francisco 24 Cal
Syracuse Fire Door Corp Syracuse N Y
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
U S Plywood Corp 55 W 44th St N Y 18 N Y p.13, 181, 220, 257
Williamsburg Steel Products Co 86 Quay St Brooklyn 22 N Y
The J G Wilson Corp 370 Lexington Av NY 17 NY

DOORS—flush

American Plywood Corp New London Wis p.198
Carr Adams & Collier Co Dubuque Ia p.147
W D Crooks & Sons Inc Williamsport Pa
Davis Plywood Corp 12555 Berea Road Cleveland 11 O
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Fir Door Institute 1205 Rust Bldg Tacoma 2 Wash p.167
Harbor Plywood Corp Hoquiam Wash p.21-24
B M Heede Inc 80 Broad St NY NY p.79
Higgins Inc New Orleans La p.317
Huttig Mfg Co Box AL Muscatine Ia p.171
Ideal Co Box 889 Waco Tex
Ipik Plywood Co Kenner La p.190
Kochton Plywood & Veneer Co Inc 509 W Roosevelt Rd Chgo 7 Ill
M & M Wood Working Co Resnprest Div 2301 N Columbia Portland 3 Ore
The Mengel Co Inc Louisville 1 Ky p.13, 181
Morgan Co Oshkosh Wis
Northwest Door & Plywood Sales Tacoma 1 Wash
Paine Lbr Co Ltd Oshkosh Wis p.193
Products-from-Sweden Inc 80 Broad St NY 4 NY p.189
Rock Island Sash & Door Works Rock Island Ill
Roddis Plywood Corp Marshfield Wis p.68
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
U S Mengel Plywood Inc Box 1612 Louisville 1 Ky
United States Plywood Corp 55 W 44th New York 18 N Y p.13, 181, 220, 257
The Wheeler Osgood Co 1216 St Paul Av Tacoma 1 Wash p.141

DOORS—garage

Barber-Colman Co Rockford Ill
Calder Mfg Co 628 N Prince St Lancaster 4 Pa p.410
Carr Adams & Collier Co Dubuque Ia p.147
Curtis Cos Inc Clinton Ia
Detroit Steel Products Co Dept AL-4 2269 E Grand Blvd Detroit 11 Mich p.176-177
Farley & Loetscher Mfg Co Dubuque Ia
Fir Door Institute 1205 Rust Bldg Tacoma 2 Wash p.167
Frantz Mfg Co Sterling Ill p.410
Hall Enterprises Casco Wis
Harbor Plywood Corp Hoquiam Wash p.21-24
Louden Machinery Co Fairfield Iowa
M & M Wood Working Co Resnprest Div 2301 N Columbia Portland 3 Ore
Marquart Millwork Co Oshkosh Wis p.148
Mauk Seattle Lumber Co Skinner Bldg Seattle 1 Wash p.81
North Plywood Inc 1425 Fourth Av Seattle 1 Wash
Northwest Door & Plywood Sales Tacoma 1 Wash
Richards Wilcox Mfg Co Aurora Ill p.249
Roach & Musser Co Muscatine Ia p.191
Robinson Mfg Co Box 904 Everett Wash
George J Silbernagel S S Michigan Av Chgo 3 Ill p.31
Geo Silbernagel & Sons Co Wausau Wis
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
Strand Building Products Co Dept AL-4 2250 E Grand Av Detroit Mich p.400
Wagner Mfg Co Cedar Falls Iowa
The J G Wilson Corp 370 Lexington Av New York 17 N Y

DOORS—garage, overhead type

Barber-Colman Co Rockford Ill
Calder Mfg Co 628 N Prince St Lancaster 4 Pa p.410

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Capitol Products 311 E Adams St Springfield Ill p.410
Carr Adams & Collier Co Dubuque Ia p.147
Clark Door Co Inc Newark 8 N J
Cole Mfg Co PO Box 2657 Memphis 2 Tenn p.192
The Commander Door Inc Holmes Pa
Curtis Cos Inc Clinton Ia
Detroit Steel Products Co Dept AL E Grand Blvd Detroit 11 Mich p.176-177
Dyke Bros Little Rock Ark p.192
Farley & Loetscher Mfg Co Dubuque Ia
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Fir Door Institute 1205 Rust Bldg Tacoma 2 Wash p.167
Frantz Mfg Co Sterling Ill p.410
Hall Enterprises Casco Wis
Harbor Plywood Corp Hoquiam Wash p.21-24
Holmes Mfg Co 211 N Madison Av Los Angeles 4 Cal
Kaiser Fleetwings Sales Corp Birmingham Mich
M & M Wood Working Co Resnprest Div 2301 N Columbia Portland 3 Ore
Marquart Millwork Co Oshkosh Wis p.148
Millwork Distributors Co 2 N Kresson St Baltimore 24 Md p.188
The Monarch Door Folsom Penn p.404
National Mfg Co Sterling Ill
Northwest Door & Plywood Sales Tacoma 1 Wash
Phenix Mfg Co 4129 N Port Washington Rd Milwaukee 12 Wis p.411
Richards-Wilcox Mfg Co Aurora Ill p.249
Roach & Musser Co Muscatine Ia p.191
Rowe Mfg Co Galesburg Ill
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
Strand Building Products Co Dept AL-4 Detroit 26 Mich (steel) p.409
Wagner Mfg Co Cedar Falls Iowa
The Wheeler Osgood Co 1216 St Paul Av Tacoma 1 Wash p.141
Wilson Foundry & Machine Co Pontiac Mich
J G Wilson Corp 370 Lexington Av NY 17 NY

DOORS—glass

Semon Bache & Co 636 Greenwich St NY 14 NY
Cole Mfg Co P O Box 2657 Memphis 2 Tenn p.192
Harbor Plywood Corp Hoquiam Wash p.21-24
Huttig Mfg Co Box AL Muscatine Iowa p.171
Huttig Sash & Door Co 1206 S Vandeventer Av St Louis 10 Mo
Libbey-Owens-Ford Glass Co Toledo 0 p.269-272
Marquart Millwork Co Oshkosh Wis p.148
National Mirror Works Rockford Ill
Northwest Door & Plywood Sales Tacoma 1 Wash
Pittsburgh Plate Glass Co 2143-9 Grant Bldg Pittsburgh 19 Pa p.267
Safetee Glass Co Philadelphia 44 Pa
Segelke & Kohlhaus Co La Crosse Wis
Shower Door Co of America 973 Peachtree St NE Atlanta 5 Ga
Toledo Plate & Window Glass Co 1041 Utica St Toledo 2 Ohio
The Wheeler Osgood Co 1216 St Paul Av Tacoma 1 Wash p.141

DOORS—hardwood

American Plywood Corp New London Wis p.198
American Sash & Door Co Kansas City 1 Mo
Carr Adams & Collier Co Dubuque Iowa p.147
Cole Mfg Co PO Box 2657 Memphis 2 Tenn p.192
Curtis Cos Inc Clinton Ia
Dyke Bros Little Rock Ark p.192
Farley & Loetscher Mfg Co Dubuque Ia
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Gregg & Son 25 Crown St Nashua N H p.158-159
Hoosier Sash & Door Co Anderson Ind p.194
Huttig Mfg Co Box AL Muscatine Iowa p.171
Ipik Plywood Co Kenner La p.190
M & M Wood Working Co Resnprest Div 2301 N Columbia Portland 3 Ore
Marquart Millwork Co Oshkosh Wis p.148
The Mengel Co Inc Louisville 1 Ky p.13, 181
Midland Bldg Industries Inc Indianapolis 6 Ind
Millwork Distributors Co 2 N Kresson St Baltimore 24 Md p.188
Morgan Company Oshkosh Wis
Northwest Door & Plywood Sales Co Tacoma Wash
Rock Island Sash & Door Wks Rock Island Ill
Roddis Plywood Corp Marshfield Wis p.68
U S Mengel Plyoods Inc Box 1612 Louisville 1 Ky
United States Plywood Corp 55 W 44th New York 18 N Y p.13, 181, 220, 257
The Wheeler Osgood Co 1216 St Paul Av Tacoma 1 Wash p.141

DOORS—laundry chute

Air Control Products Inc Coopersville Mich
Carr Adams & Collier Co Dubuque Iowa p.147
Copco Steel & Engineering Co 14035 Grand River Av Detroit 27 Mich
Donley Bros Co 13928 Miles Av Cleveland 5 O p.111-134
Gabriel Steel Co Cat A 13700 Sherwood Detroit 12 Mich p.102-103
Miami Cabinet Div Philip Carey Mfg Co Middletown Ohio

DOORS—metal

Adams Co Dubuque Iowa
William Bayley Co Springfield O
Calder Mfg Co 628 N Prince St Lancaster 4 Pa p.410
Ceco Steel Products Corp 5601 W 26th Chgo 50 Ill p.168-169
Cornell Iron Wks Inc 36th Av & 13th Long Island City 1 NY
Crittall Federal Inc Waukesha Wis
Detroit Steel Products Co Dept AL-4 2269 E Grand Blvd Detroit 11 Mich p.176-177
Edwards Mfg Co 427 Culvert St Cincinnati 2 Ohio
Hope's Windows Inc Jamestown NY
The Kawneer Co Niles Mich
Mesker Bros Sales Div 4344 Geraldine St Louis Mo p.172-173
Metal Crafters Division Castone Products Co Cedar Rapids Iowa p.110
Richards-Wilcox Mfg Co Aurora Ill p.249
F P Smith Wire & Iron Wks 2346 Clybourn Av Chgo 14 Ill
Soule Steel Co 1750 Army St San Francisco 24 Cal
Southern Wire & Iron Wks 441 Memorial Drive S E Atlanta Ga
Strand Building Products Co Dept AL-4 2250 E Grand Av Detroit Mich p.409
Truscon Steel Co Youngstown 1 Ohio
Williamsburg Steel Products Co 86 Quay St Brooklyn 22 NY (also metal clad)

DOORS—plywood

American Plywood Corp New London Wis p.198
Buffelen Lumber & Mfg Co Tacoma Wash
Carr Adams & Collier Co Dubuque Iowa p.147
Cole Mfg Co P O Box 2657 Memphis 2 Tenn p.192
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Fir Door Institute 1205 Rust Bldg Tacoma 2 Wash p.167
Gregg & Son 25 Crown St Nashua N H p.158-159
Harbor Plywood Corp Hoquiam Wash p.21-24
Higgins Inc New Orleans La p.317
Ipik Plywood Co Kenner La p.190
M & M Wood Working Co Resnprest Div 2301 N Columbia Portland 3 Ore
Mauk Seattle Lbr Co Skinner Bldg Seattle 1 Wash p.81
The Mengel Co Inc Louisville 1 Ky p.13, 181
Northwest Door & Plywood Sales Tacoma 1 Wash
Pacific Mutual Door Co Tacoma Wash
Roddis Plywood Corp Marshfield Wis p.68
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
U S Plywood Corp 55 W 44th NY 18 NY p.13, 181, 220, 257

DOORS—screen

Carr Adams & Collier Co Dubuque Ia p.147
Cole Mfg Co P O Box 2657 Memphis 2 Tenn p.192
Continental Screen Co 1249 Washington Blvd Detroit 26 Mich p.136
Curtis Cos Inc Clinton Ia
Farley & Loetscher Mfg Co Dubuque Ia
Electric Fly Screen Co Inc Lindenhurst L I N Y (electrified)
Fir Door Institute 1205 Rust Bldg Tacoma 2 Wash p.167
Gregg & Son 25 Crown St Nashua N H p.158-159
Harbor Plywood Corp Hoquiam Wash p.21-24
Hope's Windows Inc Jamestown N Y
Huttig Mfg Co Box AL Muscatine Ia p.171
Marquart Millwork Co Oshkosh Wis p.148
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
National Screen Co Inc Suffolk Va
National Screen Door Co Montgomery 3 Ala
Northwest Door & Plywood Sales Tacoma 1 Wash
Phenix Mfg Co 4129 N Port Washington Rd Milwaukee 12 Wis p.411
Roach & Musser Co Muscatine Ia p.191
Robinson Mfg Co Everett Wash
F E Schumacher Co Hartville O
Simpson Logging Co 1010 White Bldg Seattle 1 Wash

DOORS—shower glass panel

The Kawneer Co Niles Mich
Safetee Glass Co Philadelphia 44 Pa
Shower Door Co of America 973 Peachtree St N E Atlanta 5 Ga

DOORS—sidewalk

The Adams Co Dubuque Ia
The Bilco Co 164 Hallock Ave New Haven 6 Conn
Edwards Mfg Co 427 Culvert St Cincinnati 2 Ohio
Fries & Son Covington Ky
Logan Co Inc Louisville 6 Ky

DOORS—softwood

American Sash & Door Co Kansas City 1 Mo
Burke Millwork Co Inc 3201 Fremont Av Seattle 3 Wash
Carr Adams & Collier Co Dubuque Iowa p.147
Cole Mfg Co P O Box 2657 Memphis 2 Tenn p.192
Curtis Cos Inc Clinton Ia
Dyke Bros Little Rock Ark p.192
Farley & Loetscher Mfg Co Dubuque Ia
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Fir Door Institute 1205 Rust Bldg Tacoma 2 Wash p.167
Harbor Plywood Corp Hoquiam Wash p.21-24
Huttig Mfg Co Box AL Muscatine Ia p.171
Huttig Sash & Door Co 1206 Vandeventer Av St Louis 10 Mo
The Long Bell Lumber Co R A Long Bldg Kansas City 6 Mo & Longview Wash
M & M Wood Working Co Resnprest Div 2301 N Columbia Portland 3 Ore
Marquart Millwork Co Oshkosh Wis p.148
Mauk Seattle Lbr Co Skinner Bldg Seattle 1 Wash p.81
Millwork Distributors Co 2 N Kresson St Baltimore 24 Md p.188
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
The Mengel Co Inc Louisville 1 Ky p.13, 181
Nicoll Lbr Co 121 19th St Oakland 7 Cal
North Plywood Inc 1425 Fourth Av Seattle 1 Wash
Northwest Door & Plywood Sales Tacoma 1 Wash
Pacific Mutual Door Co Tacoma Wash
Ponderosa Pine Woodwork 111 W Washington St Chicago 2 Ill
Products-from-Sweden Inc 80 Broad St NY 4 NY p.189
Roach & Musser Co Muscatine Ia p.191
Robinson Mfg Co Everett Wash
Rock Island Sash & Door Wks Rock Island Ill
Geo J Silbernagel S S Michigan Av Chicago 3 Ill p.31
Simpson Industries Inc Seattle Wash
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
United States Plywood Corp 55 W 44th St N Y 18 N Y p.13, 181, 220, 257
The Wheeler Osgood Co 1216 St Paul Av Tacoma 1 Wash p.141

DOORS—storm

Cole Mfg Co P O Box 2657 Memphis 2 Tenn p.192
Curtis Cos Inc Clinton Ia
Farley & Loetscher Mfg Co Dubuque Ia
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Fir Door Institute 1205 Rust Bldg Tacoma 2 Wash p.167
Hope's Windows Inc Jamestown N Y

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Marquart Millwork Co Oshkosh Wis p.148
Millwork Distributors Co 2 N Kresson St Baltimore 24 Md p.188
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
Northern Wood Products Co Detroit 26 Mich
Northwest Door & Plywood Sales Tacoma 1 Wash
Phenix Mfg Co 4129 N Port Washington Rd Milwaukee 12 Wis p.411
Rock Island Sash & Door Wks Rock Island Ill
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
Weyerhaeuser Sales Co St Paul Minn p.62-63
White Pine Sash Co Spokane Wash

DOORS—wood, cabinet & cupboard

Aetna Plywood & Veneer Co 1732 N Elston Av Chgo Ill p.11
American Plywood Corp New London Wis p.198
Carr Adams & Collier Co Dubuque Ia p.147
Cole Mfg Co P O Box 2657 Memphis 2 Tenn p.192
Curtis Cos Inc Clinton Ia
Farley & Loetscher Mfg Co Dubuque Ia
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Fir Door Institute 1205 Rust Bldg Tacoma 2 Wash p.167
Gregg & Son Nashua N H p.158-159
Huttig Mfg Co Box AL Muscatine Ia p.171
Ideal Co Box 889 Waco Texas
Ipik Plywood Co Kenner La p.190
M & M Wood Working Co Resnprest Div 2301 N Columbia Portland 3 Ore
Marquart Millwork Co Oshkosh Wis p.148
The Mengel Co Inc Louisville 1 Ky p.13, 181
Morgan Co Oshkosh Wis
Northwest Door & Plywood Sales Tacoma 1 Wash
Pacific Mutual Door Co Tacoma Wash
Rock Island Sash & Door Wks Rock Island Ill
Roddis Plywood Corp Marshfield Wis p.68
Segelke & Kohlhaus Co La Crosse Wis
Geo J Silbernagel S S Michigan Ave Chicago 3 Ill p.31
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
United States Plywood Corp 55 W 44th St New York 18 N Y p.13, 181, 220, 257

DOWELS—wood

Chicago Wood & Plastic Products 4444 W Irving Park Chgo 41 Ill
Cole Mfg Co PO Box 2657 Memphis 2 Tenn p.192
Despres Dowel Mfg Co Grand Rapids Mich
Englewood Dowel Co 222 W North Bank Dr Chgo Ill
Fordyce Lumber Co Fordyce Ark p.313
Grand Rapids Dowel Wks Grand Rapids Mich
Holt Hardwood Co Oconto Wis p.322
McMinnville Handle Co McMinnville Tenn
Harry Meyer Wood Prod 1654 W Hubbard Chgo 1 Ill
Nashotah Moulding & Mfg Co Nashotah Wis
Northwoods Mfg Co Inc Manistique Mich
George J Silbernagel S S Michigan Av Chgo 3 Ill p.31
South Bend Dowel Wks South Bend Ind
H A Stiles Co 174 Portland St Boston 14 Mass

DRAFTING SUPPLIES

Eugene Dietzgen Co 2425 N Sheffield Av Chgo Ill
Chas M Higgins & Co 271 9th Brooklyn N Y
Keuffel & Esser Co Hoboken N J
Frederick Post Co 155 E Ohio Chgo Ill
H E Smith Co Adrian Mich
Sterling-Freeland Industries Inc 4701 N Western Av Chgo 25 Ill p.423
Universal Drafting Machine Co 3110 Payne Av Cleveland 14 Ohio
Warren Knight Co 136 N 12th St Philadelphia 7 Pa

DRILL PRESSES

Boice Crane Co 930 W Central Av Toledo 6 Ohio
Champion Blower & Forge Co Lancaster Pa
Delta Mfg Co Milwaukee Wis
Ekstrom Carlson & Co Rockford Ill
Walker-Turner Co Inc Plainfield N J
The Wellman Products Co Cleveland 3 Ohio

DRILLS—masonry

Brunner & Lay Co 727 S Jefferson Chgo Ill
Damascus Steel Prod Corp Rockford Ill
Delaware Tool Steel Corp Wilmington 99 Del
Kraeuter & Co Newark N J
Mall Tool Co 7733 S Chicago Av Chicago 19 Ill
Mayhew Steel Products Inc Shelburne Falls Mass
Mephisto Tool Co Inc Hudson N Y
New England Carbide Tool Co Inc Cambridge 39 Mass
Paine Co 2951 Carroll Av Chicago 12 Ill
Rainey-Tools Grove City Pa
Red Devil Tools Irvington 11 N J p.10
Vulcan Tool Mfg Co Quincy 69 Mass
Wodack Electric Tool Corp 4627 W Huron Chgo 44 Ill

DRILLS—portable electric

Black & Decker Mfg Co Towson 4 Md
Chicago Pneumatic Tool Co 6 E 44th St New York 17 N Y
Cincinnati Electrical Tool Co Cincinnati O
Jas Clark Jr Electric Co Inc Louisville Ky
Independent Pneumatic Tool Co Aurora Ill
Louisville Electric Mfg Co Louisville Ky
Mall Tool Co 7733 South Chicago Av Chicago 19 Ill
Millers Falls Co Greenfield Mass
Milwaukee Electric Tool Corp 5360 W State St Milwaukee 8 Wis
Misener Mfg Co Inc Syracuse N Y
Speed Way Mfg Co 1834 S 52nd Av Cicero 50 Ill
Stanley Electric Tools 111 Elm New Britain Conn p.253
Wodack Electric Tool Corp 4627 W Huron Chgo Ill

DRILLS—wood

E W Deuse Co Chester Conn
John H Graham & Co Inc 105 Duane St New York 8 N Y
Greenlee Tool Co 2136 12th St Rockford Ill
Mall Tool Co 7733 S Chicago Av Chgo 19 Ill
Syracuse Twist Drill Co Univ Sta Box 38 Syracuse N Y
Yates American Machine Co Beloit Wis

DRIVERS—glazier

Fletcher Terry Co South St Forestville Conn p.256, 277, 320
Markwell Mfg Co Inc 200 Hudson St N Y 13
Red Devil Tools Irvington 11 N J p.10
Sommer & Maca Glass Machinery Co 3604 S Oakley Av Chicago 9 Ill

DRYERS—veneer

Merritt Monsanto Corp Lockport N Y
Moore Dry Kiln Co P O Box 4248 Jacksonville 1 Fla p.65
Risser Dry Kiln Engineers Inc Box 91 Little Rock Ark
Standard Dry Kiln Co Indianapolis Ind

DRY KILNS

Moore Dry Kiln Co P O Box 4248 Jacksonville 1 Fla p.65
Richmond Engineering Co Inc Richmond Va
Risser Dry Kiln Engineers Inc Box 91 Little Rock Ark
Standard Dry Kiln Co Indianapolis Ind

DUST CHUTES

Air Control Products Inc Coopersville Mich
Allen Steel Products 12911 Hillview Detroit 27 Mich
Allington & Curtis Mfg Co Saginaw Mich
Connecticut Blower Co P O Box 884 Hartford 1 Conn

DUST COLLECTION SYSTEMS

Allington & Curtis Mfg Co Saginaw Mich
American Blower Corp Detroit 32 Mich
The C O Bartlett & Snow Co 6200 Harvard Av Cleveland 5 Ohio
Connecticut Blower Co P O Box 884 Hartford 1 Conn
Detroit Sheet Mtl Wks Detroit Mich
Houston Blow Pipe & Sht Met Wks Houston Tex p.403
Ideal Industries Inc Sycamore Ill
Kirk & Blum Mfg Co Cincinnati O
Koppers Co Inc Pittsburgh 19 Pa
The Macleod Co 2236 Bogen St Cincinnati 22 Ohio
Westinghouse Electric Corp Sturtevant Div Hyde Park Boston 36 Mass

DUSTERS—insecticide

H D Hudson Mfg Co Dept D-16 589 E Illinois St Chicago 11 Ill
Lowell Mfg Co Dept 63 589 E Illinois St Chicago 11 Ill
D B Smith & Co 406 Main St Utica N Y p.489

EDGERS—floor

American Floor Surfacing Machine Co 521 S St Clair St Toledo 3 Ohio p.314
Porter-Cable Machine Co 1714 N Salina St Syracuse 8 N Y
Red Devil Tools Irvington 11 N J p.10

EDGERS—sawmill

Allis Chalmers Mfg Co Milwaukee Wis p.484
American Saw Mill Machinery Co Hackettstown N J
Corinth Machinery Co Corinth Miss
Corley Mfg Co Chattanooga 1 Tenn
Cunningham Mchy Co 735 Ricou St Shreveport La p.487
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
Frick Co Dept 75 Waynesboro Penna p.491
Lane Mfg Co Montpelier Vermont
Miner Edger Works Inc Meridian Miss
Newman Machine Co Greensboro N C
Prescott Co Menominee Mich
The Wheland Co Chattanooga 2 Tenn
Yates American Machine Co Beloit Wis

ENAMEL

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
Alabastine Paint Prod Grand Rapids Mich
American Marietta Co 43 E Ohio Chgo 11 Ill
American Varnish Co 1136 N North Branch St Chgo 22 Ill p.205
Berry Bros Inc 211 Leib St Detroit 7 Mich
Boston Varnish Co Boston 49 Mass p.213
Central Paint & Varnish Wks Brooklyn N Y
Chi-Namel Paint & Varnish Co Minneapolis Minn
Commonwealth Varnish Co 4124 W Parker Av Chicago 39 Ill
E I dupont de Nemours & Co Inc Wilmington 98 Del
Elliott Paint & Varnish Co 4525 W 5th Av Chicago 24 Ill p.221
Felton Sibley & Co Inc 136 N 4th Philadelphia 6 Pa
Forman Ford & Co 111 S 2nd Minneapolis 1 Minn
The Foy Paint Co Inc 1776 Mentor Av Cincinnati 12 Ohio
Glidden Co Cleveland O
Great Lakes Varnish Works Inc 2215 N Pulaski Rd Chicago 39 Ill
A C Horn Co 43-42 Tenth Long Island City 1 N Y
Keystone Varnish Co 71 Otsego St Brooklyn 31 N Y
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Lowe Bros Co Dayton 2 Ohio p.217
John Lucas & Co Philadelphia Pa
John W Masury & Son Inc Baltimore Md
Benjamin Moore & Co 511 Canal NY 13 NY
Murphy Paint Div Interchemical Corp Newark 1 N J
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
Patterson Sargent Co Cleveland 14 O
Pecora Paint Co Inc American & Venango Sts Philadelphia 40 Pa
Pratt & Lambert Inc 75 Tonawanda Buffalo 7 N Y
Rogers Paint Products Inc 8250 St Aubin St Detroit 11 Mich
St Louis Surfacer & Paint Co 4200 Arlington Av St Louis 20 Mo
Sargent-Gerke Co Indianapolis 6 Ind
Sherwin Williams Co Cleveland O

Number after listing indicates page on which advertisement appears

L Sonneborn Sons Inc 88 Lexington Av NY 16 NY
Standard Industrial Products Inc Box 325 Evansville 4 Ind
Standard Varnish Works 2600 Richmond Terrace Staten Island 3 N Y
Steelcote Mfg Co 3418 Gratiot St Louis 3 Mo
Truscon Laboratories Detroit Mich
20th Century Paint & Varnish Co 456 Driggs Av Brooklyn 11 N Y
U S Gutta Percha Paint Co Dept 19 Dudley & Eddy Providence 1 R I
Valentine & Co Inc 11 E 36th NY 16 NY
Vita-Var Corp 46 Albert Av Newark 2 N J
Wadsworth Howland & Co 141 Federal Boston Mass

ENGINES—diesel

Buda Co Harvey Ill
Caterpillar Tractor Co Peoria 8 Ill
Cleveland Diesel Engine Div General Motors Corp Cleveland 11 Ohio
Cummins Engine Co Columbus Ind
Fairbanks Morse & Co 600 S Michigan Av Chicago Ill
Hill Diesel Engine Co Lansing Mich
International Harvester Co 180 N Michigan Chgo Ill
Waukesha Motor Co Waukesha Wis
Witte Engine Work Div of Oil Well Supply Co U S Steel Corp Sub Kansas City 2 Mo

ENGINES—gasoline

Aermotor Co 2500 Roosevelt Rd Chgo Ill
Allis-Chalmers Mfg Co Milwaukee 1 Wis p.484
Briggs & Stratton Corp 2711 N 13th St Milwaukee 1 Wis
Buda Co Harvey Ill
Fairbanks Morse & Co 600 S Michigan Av Chgo Ill
Fuller & Johnson Mfg Co Madison Wis
Homelite Corp Port Chester N Y
Internat'l Harvester Co Inc 180 N Michigan Av Chgo Ill
Jacobson Mfg Co Racine Wis
Novo Engine Co Lansing 5 Mich
Waukesha Motor Co Waukesha Wis
Witte Engine Co Div of Oil Well Supply Co U S Steel Sub Kansas City 3 Mo

ENGINES—steam

Erie City Iron Wks Erie Pa
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
Prescott Co Menominee Mich
Washington Iron Works Seattle 4 Wash

FANS—attic, kitchen, exhaust

Airmaster Corp 4317 Ravenswood Av Chicago 13 Ill
Allington & Curtis Mfg Co Saginaw Mich
American Blower Corp Detroit Mich
Bar-Brook Mfg Co Inc 6135 Linwood Av Shreveport La
Champion Blower & Forge Co Lancaster Pa
Connecticut Blower Co P O Box 884 Hartford 1 Conn
Delco Appliance Div General Motors Sales Corp Rochester N Y
Diehl Mfg Co 1124 Finderne Av Somerville N J
Emerson Elec Mfg Co 8100 Florissant Av St Louis 21 Mo
General Elec Mfg Co Schenectady 5 N Y
H D Hudson Mfg Co Dept D-16 589 E Illinois St Chicago 11 Ill
Hunter Fan & Ventilating Co Memphis 2 Tenn
Ilg Electric Ventilating Co 2850 N Pulaski Rd Chicago 41 Ill
Johnson Fan & Blower Corp 1319 W Lake St Chgo 7 Ill
The King Co Owatonna Minn
Lau Blower Co 2007 Home Av Dayton O
The Macleod Co 2236 Bogen St Cincinnati 22 Ohio
Herman Nelson Corp 222 W Adams St Chgo 6 Ill
The Ney Mfg Co 948 High Av S W Canton 4 Ohio
Peerless Electric Co Warren Ohio
Reynolds Electric Co 2650 W Congress Chgo 12 Ill
Robbins & Myers Inc Springfield Ohio
Samson-United Corp Rochester N Y
Shepler Mfg Co Pittsburgh Pa
Signal Electric Mfg Co Menominee Mich
Universal Blower Co 1090 S Adams Av Birmingham Mich
Victor Elec Prod Inc Cincinnati Ohio
Viking Air Conditioning Corp Cleveland Ohio
Edgar T Ward Co Inc 7779 W Lake River Forest Ill
Westinghouse Electric Corp Fan Dept Springfield 2 Mass p.391

FANS—dry kiln

Bar-Brook Mfg Co Inc 6135 Linwood Av Shreveport La
Champion Blower & Forge Co Lancaster Pa
Clarage Fan Co Kalamazoo 16 Mich
Connecticut Blower Co P O Box 884 Hartford 1 Conn
Moore Dry Kiln Co P O Box 4248 Jacksonville 1 Fla p.65
Standard Dry Kiln Co Indianapolis Ind
Westinghouse Electric Corp Sturtevant Div Boston 36 Mass

FASTENERS—door chain

P & F Corbin New Britain Conn
H B Ives Co New Haven 8 Conn
McKinney Mfg Co Pittsburgh 12 Pa p.229
National Brass Co Grand Rapids Mich
Norwalk Lock Co 395 Broadway NY 13 NY
S Parker Hardware Mfg Corp 27 Ludlow St New York 2 N Y
Penn Hardware Co Reading Pa
Russell & Erwin Div The American Hardware Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sargent & Co P O Box 1940 New Haven 9 Conn
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Standard Bronze Co Bayonne 8 N J p.255
Yale & Towne Mfg Co Stamford Conn p.222, 604

FASTENERS—wood joint

Columbia Steel Co San Francisco Cal p.392
Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Knape & Vogt Mfg Co Grand Rapids 4 Mich
Republic Steel Corp Berger Mfg Div Canton 5 Ohio
The Stanley Wks New Britain Conn p.253
Superior Fastener Corp 2949 N Elston Av Chicago 18 Ill
Wright Products Co St Paul Minn

FEEDS—belt, sawmill

American Saw Mill Machinery Co Hackettstown N J
Corinth Machinery Co Corinth Miss
Cunningham Mchy Co 735 Ricou St Shreveport La p.487
The Filer & Stowell Co 147 Becher St Milwaukee 7 Wis
Lane Mfg Co Montpelier Vermont
The Wheland Co Chattanooga 2 Tenn
Yates-American Machine Co Beloit Wis

FELT—asphalt roofing

Bird & Son E Walpole Mass p.333, 356
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 O p.336
The Flintkote Co 30 Rockefeller Plaza N Y 20 N Y
Ford Roofing Products Co 111 W Washington Chgo 2 Ill
Globe Roofing Prod Co Inc Whiting Ind
Johns-Manville Corp Box 290 22 E 40th N Y 16 N Y p.280, 301, 347, 375
The Lehon Co 4425 S Oakley Chgo 9 Ill
B F Nelson Mfg Co Minneapolis 13 Minn
The Ruberoid Co 500 Fifth Ave N Y 18 N Y p.349

FENCE—chain link

American Chain Link Fence Co Medford Mass
Anchor Post Fence Div Anchor Post Products Inc 6500 Eastern Av Baltimore 24 Md
Century Fence Co Waukesha Wis
Chain Link Fence Corp 1629 W 31st Chgo Ill
Cincinnati Iron Fence Co Inc 2110 Florence Av Cincinnati 6 Ohio
Colorado Fuel & Iron Corp Denver 1 Colo
Continental Steel Corp Kokomo Ind p.395
Copperweld Steel Co Glassport Pa
Cyclone Fence Div American Steel & Wire Co U S Steel Corp Sub P O Box 260 Waukegan 1 Ill
Logan Co Inc Louisville 6 Ky
Mid-States Steel & Wire Co Crawfordsville Ind
Nichols Wire & Steel Co Davenport Iowa (steel and aluminum)
Page Steel & Wire Div American Chain & Cable Co Inc Monessen Pa
Pittsburgh Steel Co Pittsburgh Pa
F P Smith Wire & Iron Wks 2346 Clybourn Av Chicago 14 Ill
Southern Wire & Iron Works 441 Memorial Drive S E Atlanta Ga
Stewart Iron Wks Co Inc 1551 Stewart Block Cincinnati 1 Ohio
Wickwire Spencer Steel A Div of The Colorado Fuel & Iron Corp 500 Fifth Av New York 18 N Y

FENCE—rustic

Anchor Post Fence Div Anchor Post Products Inc 6500 Eastern Av Baltimore 24 Md
Elhide Co 130 Sixth St Cambridge 42 Mass
Fence Co of America 608 S Dearborn St Chicago 5 Ill
Mac Gillis & Gibbs Co 324 E Wisconsin Av Milwaukee 2 Wis
Harry M Wolfe 666 Lake Shore Dr Chicago 11 Ill
Wood Products Co 421 Phillips Av Toledo 12 O

FENCE—snow

E S Gaynor Lumber Co Sioux City 1 Iowa
Illinois Wire & Mfg Co P O Box 1396 Joliet Ill p.399, 402
William Kelley—Lumber 735 N Water St Milwaukee 2 Wis
Lincraft Inc Burlington N J
Mattson Wire & Mfg Co Inc Joliet Ill
Nebraska Bridge Supply & Lumber Co Omaha 5 Neb
Rowe Mfg Co Galesburg Ill
Wheeler-Arnold Co Wittenberg Wis

FENCE—steel lawn

American Steel & Wire Co U S Steel Corp Sub Rockefeller Bldg Cleveland 13 Ohio p.392
Bethlehem Steel Co Bethlehem Pa
A G Busch & Co Inc 2632 N Central Av Chgo 39 Ill
Cincinnati Iron Fence Co Inc 2110 Florence Av Cincinnati 6 Ohio
Colorado Fuel & Iron Corp Denver 1 Colo
Columbia Steel Co Russ Bldg San Francisco 6 Cal p.392
Continental Steel Corp Kokomo Ind p.395
Cyclone Fence Div American Steel & Wire Co U S Steel Corp Sub Waukegan Ill
Edwards Mfg Co 427 Culvert St Cincinnati 2 Ohio
Keystone Steel & Wire Co Peoria Ill p.397
Metal Crafters Div Castone Products Co Cedar Rapids Iowa p.110
Mid-States Steel & Wire Co Crawfordsville Ind
Nichols Wire & Aluminum Co Davenport Iowa
Northwestern Steel & Wire Co Sterling Ill
Pittsburgh Steel Co Pittsburgh Pa
Standard Mfg Co Cedar Falls Iowa
Stewart Iron Wks Co Inc 1551 Stewart Block Cincinnati O
Tennessee Coal Iron & R R Co U S Steel Corp Sub Birmingham 2 Ala p.392

FENCE—wood picket

Atlas Fence Co Philadelphia Pa
Concord Woodworking Co Inc 457 Main St West Concord Mass
The Davis & Siehl Co Cincinnati 23 O
Elhide Co 130 Sixth St Cambridge 42 Mass
Fence Co of America 608 S Dearborn Chgo 5 Ill
Fordyce Lumber Co Fordyce Ark p.313
E S Gaynor Lumber Co Sioux City 1 Iowa
Illinois Wire & Mfg Co P O Box 1396 Joliet Ill p.399, 402
Lincraft Inc Burlington N J
Mac Gillis & Gibbs Co 324 E Wisconsin Av Milwaukee 2 Wis
Mattson Wire & Mfg Co Joliet Ill
Nebraska Bridge Supply & Lumber Co Omaha 5 Neb
Redwood Garden Materials Co Los Angeles 21 Cal
Rock Island Sash & Door Works Rock Island Ill
Rowe Mfg Co Galesburg Ill
Texas Fence Co Rt 10 Box 388 Dallas Tex
Willamette Valley Lbr Co Dallas Ore
Harry M Wolfe 666 Lake Shore Dr Chicago 11 Ill
Wood Products Co 421 Phillips Av Toledo 12 Ohio

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FENCE—woven, wire, barb

American Steel & Wire Co U S Steel Sub Rockefeller Bldg Cleveland 13 Ohio p.392
Anchor Post Fence Div Anchor Post Products Inc 6500 Eastern Ave Baltimore 24 Md
Bethlehem Steel Co Bethlehem Pa
Colorado Fuel & Iron Corp Denver Colo
Columbia Steel Co Russ Bldg San Francisco 6 Cal p.392
Continental Steel Corp Kokomo Ind p.395
Copperweld Steel Co Glassport Pa
Jones & Laughlin Steel Corp Pittsburgh Pa
Keystone Steel & Wire Co Peoria Ill p.397
Mid-States Steel & Wire Co Crawfordsville Ind
Nichols Wire & Aluminum Co Davenport Iowa
Northwestern Steel & Wire Co Sterling Ill
Pittsburgh Steel Co Pittsburgh Pa
Republic Steel Corp Cleveland 1 Ohio
Sheffield Steel Corp Kansas City Mo
F P Smith Wire & Iron Works Inc 2346 N Clybourn Av Chicago 14 Ill
Southern Wire & Iron Works 444 Memorial Drive S E Atlanta Ga
Stewart Iron Wks Co Inc 1551 Stewart Block Cincinnati 1 Ohio
Tennessee Coal Iron & R R Co U S Steel Corp Sub Birmingham 2 Ala p.392

FENCE CONTROLLERS—electric

Coburn Mfg Co Whitewater Wis
Detjen Corp 303 W 42nd St N Y 18 N Y
Electric Fly Screen Co Inc Lindenhurst L I N Y
Electrite Fence Co Whitewater Wis
Gardner Mfg Co Horicon Wis
Guaranteed Products Wellington Ohio
Nichols Wire & Aluminum Co Davenport Iowa
Prime Mfg Co Milwaukee Wis
Reynolds Electric Co 2650 W Congress Chicago 12 Ill

FILERS—saw, band, circular, etc.

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Boice Crane Co 930 W Central Av Toledo 6 Ohio
Corley Mfg Co Chattanooga Tenn
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Foley Mfg Co Minneapolis 13 Minn
Hanchett Mfg Co Big Rapids Mich
R Hoe & Co Inc 910 E 138th St New York 54 N Y

FILES

Chelsea File Wks Norwich Conn
Delta File Wks Inc 4837 James St Philadelphia 37 Pa
Heller Brothers Co Newark 4 N J
R Hoe & Co Inc 910 E 138th St New York 54 N Y (metal working)
Nicholson File Co Providence R I
Nolvex File Co 10329 Detroit Av Cleveland 2 Ohio
Fayette R Plumb Inc 4837 James St Philadelphia 37 Pa
Red Devil Tools Irvington 11 N J p.10

FILLER—crack

Alabastine Paint Products Grand Rapids 9 Mich
American Varnish Co 1136 N North Branch St Chgo 22 Ill p.205
Blue Ridge Talc Co Inc Henry Va
Boston Varnish Co Boston 49 Mass p.213
Boyle-Midway Inc 257 Cornelison Av Jersey City 2 N J p.220
Donald Durham Co PO Box 804 Des Moines 4 Ia p.221
Kay-Tite Co West Orange N J
Lignotite Co 882 Milwaukee Ave Chgo 22 Ill
Lowe Bros Co Dayton 2 Ohio p.217
Mixtite Corp North Haven Conn
Placo Div Paisley Products Inc 718 Washington Av North Minneapolis Minn
Reardon Co St Louis 6 Mo p. 218-219
Rogers Paint Products Inc 8250 St Aubin St Detroit 11 Mich
Savogran Co 25 Huntington Av Boston 16 Mass
Schalk Chemical Co 351 E 2nd St Los Angeles 12 Cal
Smooth-On Mfg Co 568-574 Communipaw Av Jersey City 4 N J
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Tamms Silica Co 228 N LaSalle Chgo 1 Ill p.449
Technical Supply Co 1911 University Av Palo Alto Cal
Tilette Cement Co Inc 401 Lafayette St New York 3 N Y
United Gilsonite Laboratories Scranton 1 Pa
Webb Products Co San Bernardino Calif & Norcross Ga
X-Pando Corp 43-15 36th St Long Island City 1 N Y

FILLER—wood

Alabastine Paint Products Grand Rapids 9 Mich
American Varnish Co 1136 N North Branch St Chgo 22 Ill p.205
Berry Bros Inc 211 Leib St Detroit 7 Mich
Breinig Bros Inc Hoboken N J
Donald Durham Co PO Box 804 Des Moines 4 Ia p.221
Farwell Ozmun Kirk & Co St Paul 1 Minn
W P Fuller & Co 301 Mission San Francisco 19 Cal
Glidden Co Cleveland Ohio
Grand Rapids Varnish Corp 565 Godfrey Av S W Grand Rapids 2 Mich
Keystone Varnish Co 71 Otsego St Brooklyn 31 N Y
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Lignotite Co 882 Milwaukee Ave Chgo 22 Ill
Lowe Bros Co Dayton 2 Ohio p.217
The Mengel Co Inc Louisville 1 Ky p.13, 181
Murphy Paint Div Interchemical Corp Newark 1 N J
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
Peaslee-Gaulbert Paint & Varnish Co 223 N 15th St Louisville Ky
Savogran Co 25 Huntington Av Boston 16 Mass
Schalk Chemical Co 351 E Second St Los Angeles 12 Calif
Technical Supply Co 1911 University Av Palo Alto Cal
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
United States Plywood Corp 55 W 44th St N Y 18 N Y p.13, 181, 220, 257
Webb Products Co San Bernardino Calif and Norcross Ga
The Wilbur & Williams Co Boston 16 Mass

FINANCING SERVICE

Allied Bldg Credits Inc Box 3426 Terminal Annex Los Angeles 54 Cal
Commercial Credit Co Baltimore 2 Md
Douglas-Guardian Warehouse Corp 118 N Front New Orleans 1 La
Investors Syndicate Roanoke Bldg Minneapolis Minn
Lawrence Warehouse Co WP Story Bldg Los Angeles Calif

FIRE ESCAPES

Davy Automatic Fire Escape Co PO Box 51 Colvin Station Syracuse 5 N Y
Decatur Iron & Steel Co Decatur Ala
Edwards Mfg Co 427 Culvert St Cincinnati 2 Ohio
General Detroit Corp 2272 E Jefferson Av Detroit 7 Mich
Geo L Mesker Steel Corp Evansville 8 Ind
Metal Crafters Div Castone Products Co Cedar Rapids Iowa p.110
St Paul Foundry & Mfg Co St Paul 3 Minn
F P Smith Wire & Iron Wks Inc 2346 N Clybourn Chgo Ill
Southern Wire & Iron Works 441 Memorial Drive S E Atlanta Ga

FIRE ESTINGUISHERS

W D Allen Mfg Co 566 W Lake Chgo 6 Ill
American La France Foamite Corp Elmira N Y
Elkhart Brass Mfg Co Inc Elkhart Ind
Fyr-Fyter Co Dayton 1 O
General Detroit Corp 2272 E Jefferson Av Detroit 7 Mich
Grinnell Co Providence R I
International Fire Equip Corp 94 State Staten Island 10 N Y
Walter Kidde & Co Inc Belleville N J
Pyrene Mfg Co 560 Belmont Av Newark 8 N J
Safety Fire Extinguisher Co 291 7th NY NY
D B Smith & Co 406 Main St Utica N Y p.489

FIREPLACE EQUIPMENT

Adams Co Dubuque Ia
Allen Steel Products 12911 Hillview Detroit 27 Mich
Bennett-Ireland 449 Pine St Norwich N Y p.386
Chattanooga Implement & Mfg Co Chattanooga Tenn
Colonial Brass Co Middleboro Mass
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Eastern Connecticut Welding Corp New London Conn
Heatilator Inc 313 E Brighton Av Syracuse N Y p.383
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105
Majestic Co 103 Erie St Huntington Ind p.90
Shepler Mfg Co 1312 Sheffield St N S Pittsburgh 12 Pa (logs, electric)
F P Smith Wire & Iron Works Inc 2346 N Clybourn Av Chicago 14 Ill
Superior Fireplace Co 1709-D East 15th St Los Angeles 21 Cal & 601-X North Point Road Baltimore 6 Md p.385

FIREPLACE UNITS

Bennett-Ireland 449 Pine St Norwich N Y p.386
H W Covert Co 339 E 48th St N Y 17 N Y
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Eastern Connecticut Welding Corp New London Conn
Heatilator Inc 313 E Brighton Av Syracuse N Y p.383
Majestic Co 103 Erie St Huntington Ind p.90
Price Fireplace Heater & Tank Corp 93 Austin St Buffalo 7 N Y p.388-389
Readybuilt Products Co 1705-23 McHenry St Baltimore 23 Md
Superior Fireplace Co 1709-D East 15th St Los Angeles 21 Cal & 601-X North Point Road Baltimore 6 Md p.385

FIREPLACES—outdoor

Adams Co Dubuque Ia
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Hancock Iron Wks Pontiac 14 Mich
Industrial Iron Works 6011 S W Macadam Av Portland 1 Ore
Majestic Co 103 Erie St Huntington Ind p.90
Price Fireplace Heater & Tank Corp 93 Austin St Buffalo 7 N Y p.388-389
Silent Glow Oil Burner Corp Hartford Conn

FIREPROOFING CHEMICALS—wood

Albi Firepel Corp 9 Park Pl NY NY
De-Oxo-Lin Chemical Products Inc 3051 Rosslyn St Los Angeles 41 Cal
Koppers Co Inc Pittsburgh 19 Pa
Monsanto Chemical Co 1700 S Second St Louis 4 Mo
Protexol Corp 105 Market St Kenilworth 4 N J p.85
The Sullivan Co PO Box 2606 Memphis 2 Tenn
Victor Chemical Wks 141 W Jackson Chgo Ill
The Wilbur & Williams Co Boston 16 Mass (fire resistant paint)

FIXTURES—store display

Equipto Div of Aurora Equipment Co Aurora Ill
General Wood Works Council Bluffs Ia
W C Heller & Co Cat #40A 1050 Bryant St Montpelier O p.468
Knape & Vogt Mfg Co 658 Richmond St N W Grand Rapids 4 Mich
Marvel Rack Mfg Co Minneapolis Minn
Warner Mfg Co 801 16th Av S E Minneapolis 14 Minn

FLASHING—roof, wall

Allen Steel Products 12911 Hillview Detroit 27 Mich
American Brass Co Waterbury Conn
Angier Corp Framingham Mass
Barrett Div Allied Chem & Dye Corp 40 Rector N Y 6 N Y p.351
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Ceco Steel Products Corp 5601 W 26th Chgo 50 Ill p.168-169
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Cheney Industries Trenton 5 N J
Edwards Mfg Co 427 Culvert St Cincinnati 2 Ohio

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Inland Steel Products Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446-447
Johns-Manville Corp Box 290 22 E 40th N Y 16 N Y p.280, 301, 347, 375
LaCrosse Steel Roofing & Corrugating Co LaCrosse Wis
Lehon Co 4425 S Oakley Chgo 9 Ill
Mid-States Steel & Wire Co Crawfordsville Ind
Mixite Corp North Haven Conn
Nichols Wire & Aluminum Co Davenport Iowa
Northwest Metal Products Inc Seattle 4 Wash
Penn Supply & Metal Corp Philadelphia Pa
Republic Steel Corp Cleveland 1 Ohio
Revere Copper & Brass Inc 230 Park Av New York 17 N Y p.107
Reynolds Metals Co Bldg Products Div 2002 S 9th St Louisville 1 Ky (aluminum) p.93
The Richkraft Co 228 N La Salle Chgo 1 Ill p.341
Sealcon Products Inc Minneapolis 2 Minn
The Sisalkraft Co Dept AL 205 W Wacker Dr Chgo 6 Ill p.335
Wasco Flashing Co Cambridge Mass
Williams-Wallace Co San Francisco 7 Cal

FLOOR SEALER

American Marietta Co 43 E Ohio Chgo 11 Ill
American Varnish Co 1136 N North Branch St Chgo 22 Ill p.205
Blue Ridge Talc Co Inc Henry Va
E L Bruce Co Memphis Tenn p.307
Ceresit Waterproofing Corp 512 S Canal Chgo 7 Ill (concrete)
Chapman Chemical Co 181 W Mallory Memphis Tenn
Continental Asbestos & Refining Corp 1 Madison Av New York 10 N Y
Forman Ford & Co 111 S 2nd St Minneapolis 1 Minn
Franklin Research Co Philadelphia 31 Pa
Glidden Co Cleveland 2 Ohio
International Chemical Co 3140 S Canal St Chicago 16 Ill
Industrial Chemical Laboratories Ltd Omaha 2 Neb
Keystone Asphalt Products Co 43 E Ohio St Chicago 11 Ill
Keystone Varnish Co 71 Otsego St Brooklyn 31 N Y
The Martin-Senour Co 2520 S Quarry St Chicago 8 Ill
Minnesota Mining & Mfg Co St Paul 6 Minn
Mixtite Corp North Haven Conn
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
The Patterson Sargent Co 1325 E 38th St Cleveland 14 Ohio
Ranetite Mfg Co Inc 1917 S Broadway St Louis Mo
Sealcon Prod Inc 927 Second Av S Minneapolis 2 Minn
Steelcote Mfg Co 3418 Gratiot St Louis 3 Mo
The Sullivan Co PO Box 2606 Memphis 2 Tenn
Tremco Mfg Co Cleveland 4 Ohio
Geo D Wetherill & Co 113 Arch St Philadelphia 6 Pa

FLOORING—hardwood and softwood (see lumber classification beginning Page 575)

FLUE BASES

Chattanooga Implement & Mfg Co Chattanooga 6 Tenn
Evans Pipe Co Uhrichsville Ohio
Gedge Bros Steel Roofing Co Anderson Ind
Streator Drain Tile Co Streator Ill

FLUE FLANGES

Adams Co Dubuque Ia
Chattanooga Implement & Mfg Co Chattanooga 6 Tenn
Columbia Pipe Co Columbia S C
Evans Pipe Co Uhrichsville Ohio

FLUE LINING

Chicago Fire Brick Co 1461 N Elston Chgo Ill
Clay City Pipe Co Uhrichsville Ohio
Columbia Pipe Co Columbia S C
Condensation Engineering Corp 122 S Michigan Av Chgo 3 Ill
Dee Clay Products Co Bloomingdale Ind
Dennison Sewer Pipe Corp 3334 Prospect Av Cleveland 15 Ohio
Denver Sewer Pipe & Clay Co Denver 1 Colo
W S Dickey Clay Mfg Co 922 Walnut St Kansas City 6 Mo
Evans Pipe Co Uhrichsville O
Gladding-McBean & Co San Francisco Cal
Laclede-Christy Clay Prod Co St Louis Mo
Lehigh Sewer Pipe & Tile Co Fort Dodge Ia
Owensboro Sewer Pipe Co Inc Owensboro Ky
Robinson Clay Prod Co Akron O
Streator Drain Tile Co Streator Ill
Universal Sewer Pipe Co Cleveland O
Washington Brick & Lime Co Box 2198 Spokane 8 Wash
What Cheer Clay Prod Co What Cheer Ia

FLUE RINGS

Adams Co Dubuque Ia
Allen Steel Products 12911 Hillview Detroit 27 Mich
Chattanooga Implement & Mfg Co Chattanooga 6 Tenn
Columbia Pipe Co Columbia S C
Dennison Sewer Pipe Corp 3334 Prospect Av Cleveland 15 O
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Evans Pipe Co Uhrichsville Ohio
Laclede-Christy Clay Prod Co St Louis Mo
Lehigh Sewer Pipe & Tile Co Fort Dodge Iowa
Majestic Co 103 Erie St Huntington Ind p.90
Sterling Foundry Co Inc Sterling Ill
A L Swett Iron Wks Medina N Y
Universal Sewer Pipe Co 1500 Union Commerce Bldg Cleveland 14 Ohio

FORESTERS—consulting

Associates Inc PO Box 5254 New Orleans La
W D Durland & Co 4411 Carowdelet St New Orleans 15 La
Thos F Grayson Prescott 5 Ark
Lemieux Bros Inc New Orleans 12 La
James W Sewall Co Old Town Maine p.82
H M Spain & Co Commerce Title Bldg Memphis Tenn

FREEZERS—home & farm

Admiral Corp 3800 W Cortland Chgo 47 Ill
Deepfreeze Div Motor Products Corp North Chicago Ill
Frigidaire Div General Motors Corp Dayton 1 Ohio
Frostor 332 S Michigan Av Chgo Ill
General Electric Co Schenectady 5 N Y
General Refrigerator Corp 678 Broadway N Y 12 N Y
Gibson Refrigerator Co Greenville Mich
Masterfreeze Corp Sister Bay Wis
Nash-Kelvinator Detroit 32 Mich
Norge Div Borg-Warner Corp 672 Woodbridge St Detroit 26 Mich
Seeger-Sunbeam Corp St Paul 6 Minn
Sub-Zero Freezer Co Rice Lake Wis
Westinghouse Electric Corp Mansfield O
Winpower Mfg Co Newton Iowa

FUEL BRIQUETTES—wood

Wood Briquettes Inc Lewiston Idaho

FUEL LINE & TANK CONDITIONERS

The Knack Corp 556 Jefferson Ct Detroit 7 Mich

FURNACE PIPE & FITTINGS

Clayton & Lambert Mfg Co 1701 Dixie Highway Louisville 10 Ky
Gedge Bros Steel Roofing Co Anderson Ind
Inland Steel Products Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446-447
Penn Supply & Metal Corp 1831 N 5th St Philadelphia 22 Pa
Red Jacket Coal Sales Co 115 E Rich St Columbus 15 Ohio
Reeves Steel & Mfg Co Dover Ohio
United States Register Co 344 E Burnham St Battle Creek, Mich
Wheeling Corrugating Co Wheeling W Va p.441

FURNACES—coal

American Foundry & Furnace Co Bloomington Ill
American Radiator & Standard Sanitary Corp Pittsburgh 22 Pa
Chrysler Corp Airtemp Div Dayton 1 Ohio
Clayton & Lambert Mfg Co 1701 Dixie Highway Louisville 10 Ky
Iron Fireman Co 3170 W 106th St Cleveland 11 Ohio
Kol-Master Corp Oregon Ill
Majestic Co 103 Erie St Huntington Ind p.90
L J Mueller Furnace Co Milwaukee Wis
Norge Heat Div Borg-Warner Corp 672 E Woodbridge St Detroit 26 Mich
Wheeling Furnace Corp Martins Ferry O

FURNACES—floor

American Radiator & Standard Sanitary Corp Pittsburgh 22 Pa
Bryant Heater Co 17825 St Clair Av Cleveland 10 Ohio
The Coleman Co Inc Wichita 1 Kan
Excelsior Stove & Mfg Co Quincy Ill
H C Little Burner Co Inc 2nd & Lincoln San Rafael Cal
Norge Heat Div Borg-Warner Corp 672 E Woodbridge St Detroit 26 Mich
Payne Furnace & Supply Co Beverly Hills Cal
Portland Stove Foundry Co Portland 2 Maine
Round Oak Co Dowagiac Mich

FURNACES—gas-fired

American Radiator & Standard Sanitary Corp Pittsburgh 22 Pa
Bryant Heater Co 17825 St Clair Av Cleveland 10 Ohio
Chrysler Corp Airtemp Div Dayton 1 Ohio
Clayton & Lambert Mfg Co 1701 Dixie Highway Louisville 10 Ky
The Coleman Co Inc Wichita 1 Kan
Diamond Iron Works Inc Minneapolis 11 Minn
Estate Stove Co Hamilton Ohio
General Electric Co Schenectady 5 N Y
The Heil Co 3000 W Montana St Milwaukee 1 Wis
Iron Fireman Co 3170 W 106th St Cleveland 11 Ohio
Majestic Co 103 Erie St Huntington Ind p.90
Morrison Steel Products Inc 601 Amhurst St Buffalo 7 N Y
L J Mueller Furnace Co Milwaukee Wis
Norge Heat Div Borg-Warner Corp 672 E Woodbridge St Detroit 26 Mich
Payne Furnace & Supply Co Beverly Hills Cal
Richmond Radiator Co 19 E 47th St NY 17 NY
Surface Combustion Corp Toledo 1 Ohio
Waterman-Waterbury Co 1121 Jackson St N E Minneapolis 18 Minn
The Williamson Heater Co Cincinnati 9 Ohio

FURNACES—oil fired

Fluid Heat Div Anchor Post Products Inc 6500 Eastern Av Baltimore 24 Md
Hart Oil Burner Co Peoria Ill
The Heil Co 3000 W Montana St Milwaukee 1 Wis
H C Little Burner Co 2nd & Lincoln Sts San Rafael Cal
Majestic Co 103 Erie St Huntington Ind p.90
L J Mueller Furnace Co Milwaukee Wis
Norge Heat Div Borg-Warner Corp 672 E Woodbridge St Detroit 26 Mich
York-Shipley Inc York Pa

FURNACES—plumbers' & tinners'

Cedarberg Mfg Co 545 S 4th St Minneapolis 15 Minn p.254
Clayton & Lambert Mfg Co 1701 Dixie Highway Louisville 10 Ky

FURNITURE—unfinished

Wm P Curtiss & Son Richland N Y
General Wood Works Council Bluffs Ia
Indiana Willow Products Co Inc Martinsville Ind (rustic)
Lincraft Inc Burlington N J (rustic)
The Long-Bell Lumber Co R A Long Bldg Kansas City 6 Mo and Longview Wash
Teepe-Whitney Co 192 Lexington Av NY NY

Number after listing indicates page on which advertisement appears

Watertown Table Slide Corp Watertown Wis
Western Pine Mfg Co Ltd Spokane 7 Wash p.197

FUSE BOXES

Cole Elec Prod Co 43-06 Crescent Long Island City N Y
Electrical Engineers Equip Co Melrose Park Ill
General Electric Co Schenectady 5 N Y
Leonard Elec Mfg Co Cleveland O
Wm Wurdack Elec Mfg Co St Louis Mo

FUSES

Bussmann Mfg Co St Louis Mo
Chase-Shawmut Co Newburyport Mass
Commercial Enclosed Fuse Co Hoboken N J
Eagle Electric Mfg Co Inc 23-10 Bridge Plaza So Long Island City 1 N Y
Economy Fuse & Mfg Co 2717 N Greenview Chgo Ill
General Electric Co Schenectady 5 N Y
Jefferson Elec Co Bellwood Ill
Kirkman Eng Corp 121 6th N Y 13 N Y
Metropolitan Elec Mfg Co 2250 Steinway Long Island City 5 N Y
Royal Elec Co Inc Pawtucket R I
Star Fuse Co Inc 235 Canal NY NY
Trico Fuse Mfg Co 2948 N 5th St Milwaukee 12 Wis
Westinghouse Electric Corp Pittsburgh 30 Pa p.430

GARAGE DOOR OPERATORS—automatic

Barber-Colman Co Rockford Ill
Federal Industries Inc 19720 W Eight Mile Rd Detroit 19 Mich
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Horton Mfg Div The Aviation Corp Cleveville O
Richards-Wilcox Mfg Co Aurora Ill p.249
Rowe Mfg Co Galesburg Ill
Vendo Electronics Co Div 74 E 12th St Kansas City Mo
Wagner Mfg Co Cedar Falls Iowa
The J G Wilson Corp 370 Lexington Av N Y 17 N Y

GARBAGE RECEPTACLES

Adams Co Dubuque Ia
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
General Electric Co 1 River Rd Schenectady 5 N Y (disposal units)
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Majestic Co 103 Erie St Huntington Ind p.90
Northwest Metal Products Inc Seattle 4 Wash
Reeves Steel & Mfg Co Dover Ohio
Sanitary Receiver Co Dunkirk N Y
Sexton Can Co Everett Mass
United States Steel Products Co U S Steel Corp Sub 30 Rockefeller Plaza New York 20 N Y p.392
Wheeling Corrugating Co Wheeling W Va p.441

GATES—farm

Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Clay Equipment Corp Cedar Falls Ia
Colorado Fuel & Iron Corp Denver 1 Colo
Continental Steel Corp Kokomo Ind p.395
Cyclone Fence Div American Steel & Wire Co U S Steel Corp Sub P O Box 260 Waukegan 1 Ill
Durabilt Mfg Co 604 Arnold Av Aurora Ill
Franklin Equipment Co Monticello Ia
Hicks Gate Co Fredericktown O
Illinois Wire & Mfg Co P O Box 1396 Joliet Ill p.399, 402
Keystone Steel & Wire Co Peoria Ill p.397
Mid-States Steel & Wire Co Crawfordsville Ind
Nichols Wire & Aluminum Co Davenport Iowa
Northwestern Steel & Wire Co Sterling Ill
Pittsburgh Steel Co Pittsburgh Pa
Purifoy Products Co 3914 E Broadway North Little Rock Ark
Republic Steel Corp Berger Mfg Div Canton 5 Ohio
Rowe Mfg Co Galesburg Ill
Sheffield Steel Corp Kansas City Mo
Standard Mfg Co Cedar Falls Ia
Weyerhaeuser Sales Co St Paul Minn p.62-63

GATES—industrial & residential

American Chain Link Fence Co Medford Mass
Anchor Post Fence Div Anchor Post Products Inc 6500 Eastern Av Baltimore 24 Md
Cincinnati Iron Fence Co Inc 2110 Florence Av Cincinnati 6 Ohio
R G Coffman Co Inc 2809 N Orange Av Orlando Fla
Continental Steel Corp Kokomo Ind p.395
Cyclone Fence Div American Steel & Wire Co U S Steel Corp Sub P O Box 260 Waukegan 1 Ill
Illinois Wire & Mfg Co P O Box 1396 Joliet Ill p.399, 402
Keystone Steel & Wire Co Peoria Ill p.397
MacGillis & Gibbs Co 324 E Wisconsin Av Milwaukee 2 Wis
Metal Crafters Div Castone Products Co Cedar Rapids Ia p.110
Nichols Wire & Aluminum Co Davenport Iowa
Northwestern Steel & Wire Co Sterling Ill
Page Steel & Wire Div American Chain & Cable Co Inc Monessen Pa
Pittsburgh Steel Co Pittsburgh Pa
Redwood Garden Materials Co Los Angeles 21 Calif
F P Smith Wire & Iron Wks Inc 2346 Clybourn Chgo 14 Ill
Standard Mfg Co Cedar Falls Iowa
Stewart Iron Wks Co Inc 1551 Stewart Block Cincinnati O

GAUGES

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Lufkin Rule Co Saginaw Mich
Jas P Marsh Corp 2073 N Southport Av Chicago 14 Ill
Millers Falls Co Greenfield Mass (butt)
Paasche Airbrush Co 1909 W Diversey Pkwy Chicago 14 Ill
Union Tool Co Orange Mass

GENERATING SETS—steam, electric, gasoline

Allis Chalmers Mfg Co Milwaukee Wis p.484
Buda Co Harvey Ill (diesel)
Construction Machinery Co Waterloo Iowa
Fairbanks Morse & Co 600 S Michigan Chgo Ill
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
Homelite Corp Port Chester N Y (gasoline)
The Ready-Power Co 3820 Grand River Av Detroit Mich (electric)
Universal Motor Co Oshkosh Wis (gasoline)
Westinghouse Electric Corp 306 Fourth Av Pittsburgh 30 Pa p.430

GLASS—ornamental

Semon Bache & Co 636 Greenwich New York 14 N Y
Dearborn Glass Co Dept RB 2402 W 21st St Chgo 8 Ill p.427
Libbey-Owens-Ford Glass Co Toledo O p.269-272
The Nurre Cos Inc Bloomington Ind
Pennsylvania Wire Glass Co Philadelphia 3 Pa
Pittsburgh Plate Glass Co 2143-9 Grant Bldg Pittsburgh 19 Pa p.267
Royal Glass Works Corp 50-20 25th Long Island City 1 N Y
Safetee Glass Co Philadelphia 44 Pa (luminated)
Shower Door Co of America 973 Peachtree St N E Atlanta 5 Ga
Technical Glass Co Inc 2050 E 48th St Los Angeles 11 Cal
Toledo Plate & Window Glass Co 1041 Utica St Toledo 2 Ohio

GLASS—plate

Semon Bache & Co 636 Greenwich New York 14 N Y
Dearborn Glass Co Dept RB 2402 W 21st St Chgo 8 Ill p.427
Libbey-Owens-Ford Glass Co Toledo O p.269-272
Mississippi Glass Co 200 5th Av NY 10 NY
National Mirror Works Rockford Ill
The Nurre Cos Inc Bloomington Ind
Pittsburgh Plate Glass Co 2143-9 Grant Bldg Pittsburgh 19 Pa p.267
Royal Glass Works Corp 50-20 25th Long Island City 1 N Y
Safetee Glass Co Philadelphia 44 Pa (luminated)
Toledo Plate & Window Glass Co 1041 Utica St Toledo 2 Ohio

GLASS—structural

Semon Bache & Co 636 Greenwich New York 14 N Y
Conrey-Prugh Glass Co Pittsburgh Pa
Libbey-Owens-Ford Glass Co Toledo O p.269-272
Mississippi Glass Co 200 5th Av NY 10 NY
National Mirror Works Rockford Ill
The Nurre Cos Inc Bloomington Ind
Pennsylvania Wire Glass Co Philadelphia 3 Pa
Pittsburgh Plate Glass C 2143-9 Grant Bldg Pittsburgh 19 Pa p.267
Royal Glass Wks Corp 50-20 25th St Long Island City N Y
Toledo Plate & Window Glass Co 1041 Utica St Toledo 2 Ohio

GLASS—window

American Window Glass Co Pittsburgh Pa
Semon Bache & Co 636 Greenwich N Y 14 N Y
Conroy-Prugh Glass Co Pittsburgh Pa
Dearborn Glass Co Dept RB 2402 W 21st St Chgo 8 Ill p.427
Fourco Glass Co Clarksburg W Va
Harding Glass Co Forth Smith Ark
Hoosier Sash & Door Co Anderson Ind p.194
Libbey-Owens-Ford Glass Co Toledo O p.269-272
Millwork Distributors Co 2 N Kresson St Baltimore 24 Md p.188
The Nurre Cos Inc Bloomington Ind
Pittsburgh Plate Glass Co 2143-9 Grant Bldg Pittsburgh 19 Pa p.267
Royal Glass Wks Corp 50-20 25th St Long Island City 1 N Y
Toledo Plate & Window Glass Co 1041 Utica St Toledo 2 Ohio

GLASS—window, wire

Semon Bache & Co 636 Greenwich New York 14 N Y
Conroy-Prugh Glass Co Pittsburgh Pa
Dearborn Glass Co Dept RB 2402 W 21st St Chgo 8 Ill p.427
Libbey-Owens-Ford Glass Co Toledo O p.269-272
Mississippi Wire Glass Co 220 Fifth Av NY NY
Pennsylvania Wire Glass Co Philadelphia Pa
Pittsburgh Plate Glass Co 2143-9 Grant Bldg Pittsburgh 19 Pa p.267
Royal Glass Works Corp 50-20 25th Long Island City 1 N Y
Toledo Plate & Window Glass Co 1041 Utica St Toledo 2 Ohio

GLASS BLOCK

American Structural Products Co Toledo 1 Ohio
Pittsburgh Corning Corp 632 Duquesne Way Pittsburgh 22 Pa
Pittsburgh Plate Glass Co 2143-9 Grant Bldg Pittsburgh 19 Pa p.267

GLASS CUTTING BOARDS

Glaziers Tool Mfg Co 611 W Adams Chgo Ill
The Fletcher Terry Co South St Forestville Conn p.256, 277, 320
Lufkin Rule Co Saginaw Mich
Red Devil Tools Irvington 11 N J p.10
Sommer & Maca Glass Machinery Co 3604 S Oakley Av Chicago 9 Ill
Warner Mfg Co 801 16th St SE Minneapolis 14 Minn

GLAZING COMPOUND

Alabastine Paint Products Grand Rapids 9 Mich
Armstrong Co 4063 S La Salle Chgo 9 Ill p.277
Biddle Co 612 S Main St St Louis 2 Mo p.191
Blue Ridge Talc Co Inc Henry Va
Briggs Maroney Co Inc Everett 49 Mass
Forman Ford & Co 111 S 2nd St Minneapolis 1 Minn
Fort Pitt Chem Co 26th & Smallman St Pittsburgh 22 Pa
The Gibson-Homans Co 2366 Woodhill Rd Cleveland Ohio
A C Horn Co 43-42 Tenth St Long Island City N Y
Landen Putty Works Malden 49 Mass
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157, 262
Mar-Kay Mfg Co 2715 S Second St St Louis Mo
Pecora Paint Co Inc American & Venango Sts Philadelphia 40 Pa
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.267
L Sonneborn Sons Inc 88 Lexington Av NY 16 NY

Number after listing indicates page on which advertisement appears

Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
The Tremco Mfg Co Cleveland 4 Ohio
Weather Seal Co 10 E Pearl St Cincinnati 2 Ohio
X-Pando Corp 43-15 36th St Long Island City 1 N Y

GLAZING—transparent plastic

Arvey Corp 3470 N Kimball Chicago 18 Ill
Celanese Plastics Corp 180 Madison av New York 16 N Y
The Dobeckmun Co Cleveland 1 Ohio
The Richkraft Co 228 N La Salle Chgo 1 Ill p.341
Sol-O-Lite Mfg Co 4301 West North Av Chgo Ill p.275
Warp Brothers 1100 N Cicero Av Chgo 51 Ill p.2

GLOVES—industrial

Broadway Rubber Mfg Co 529 E Broadway Louisville 2 Ky
The B F Goodrich Co Akron Ohio
Industrial Glove Co Danville Ill
Olympic Glove Co 97 Madison Av NY NY
Peerless Glove Co Grand Haven Mich
Pioneer Rubber Co Willard O
Seiberling Latex Prod Co Barberton O
Spartan Glove Co Dayton O

GLUE—animal

Armour & Co 1355 W 31st St Chgo 9 Ill
The Commercial Paste Co Buttles at Michigan Columbus 8 Ohio
Consumers Glue Co St Louis Mo
Franklin Glue Co Columbus 15 Ohio p.252
H B Fuller Co 255 Engle St St Paul 2 Minn
Keystone Tanning & Glue Co Keystone Glue Div Williamsport 53 Pa
Le Page's Inc Gloucester Mass
Madison Glue Corp 53 Park Place New York 7 N Y
Paisley Products Inc 1770 Canelport Av Chgo 16 Ill
Placo Div Paisley Products Inc 718 Washington Av North Minneapolis Minn
Perkins Glue Co Lansdale Pa
Tamms Silica Co 228 N La Salle St Chgo 1 Ill p.449
Webb Products Co 242 S G St San Bernardino Cal

GLUE—animal hide

Armour & Co 1355 W 31st St Chgo 9 Ill
The Commercial Paste Co Buttles at Michigan Columbus 8 Ohio
Crescent Products Co Terre Haute Ind
Franklin Glue Co Columbus 15 Ohio p.252
H B Fuller Co 255 Engle Co St Paul 2 Minn
Keystone Tanning & Glue Co Keystone Glue Div Williamsport 53 Pa
Le Page's Inc Gloucester Mass
Madison Glue Corp 53 Park Pl NY 7 NY
Perkins Glue Co Lansdale Pa
Placo Div Paisley Products Inc 718 Washington Av North Minneapolis Minn
Standard Paste & Glue Co 3620 W 38th St Chicago Ill

GLUE—casein

American Cyanamid & Chemical Corp 30 Rockefeller Plaza New York 20 N Y
The Borden Co Chemical Div 350 Madison Av N Y 17 N Y
Consumers Glue Co St Louis 6 Mo
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Franklin Glue Co (Bondwood) Columbus 15 Ohio p.252
C B Hewitt & Bros Inc 23 Greene N Y 13
Le Page's Inc Gloucester Mass
National Casein Sales 601 W 80th Chgo 20 Ill
The Mengel Co Inc Louisville 1 Ky p.13, 181
Paisley Products Inc 1770 Canalport Av Chicago 16 Ill
Perkins Glue Co Lansdale Pa
Placo Div Paisley Products Inc 718 Washington Av North Minneapolis Minn
So-Lo Works Inc Loveland Ohio
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
U S Plywood Corp 55 W 44th St N Y 18 N Y p.13, 181, 220, 257

GLUE—cold water

Armour & Co 1355 W 31st St Chgo 9 Ill
The Borden Co Chemical Div 350 Madison Av N Y 17 N Y
The Commercial Paste Co Buttles at Michigan Columbus 8 Ohio
Consumers Glue Co St Louis 6 Mo
Crescent Products Co Terre Haute Ind
Franklin Glue Co (Bondwood) Columbus 15 Ohio p.252
H B Fuller Co 255 Engle St St Paul 2 Minn
C B Hewitt & Bros Inc 23 Greene N Y 13 N Y
Le Page's Inc Gloucester Mass
The Mengel Co Inc Louisville 1 Ky p.13, 181
National Casein Sales 601 W 80th Chgo 20 Ill
Paisley Products Inc 1770 Canalport Av Chicago 16 Ill
Perkins Glue Co Lansdale Pa
Placo Div Paisley Products Inc 718 Washington Av North Minneapolis Minn
So-Lo Works Inc Loveland Ohio
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
United States Plywood Corp 55 W 44th St N Y 18 N Y p.13, 181, 220, 257

GLUE—fish

The Commercial Paste Co Buttles at Michigan Columbus 8 Ohio
Consumers Glue Co St Louis 6 Mo
Crescent Products Co Terre Haute Ind
H B Fuller Co 255 Engle St St Paul 2 Minn
C B Hewitt & Bros Inc 23 Greene N Y 13 N Y
Le Page's Inc Gloucester Mass
Paisley Products Inc 1770 Canalport Chgo 16 Ill
Placo Div Paisley Products Inc 718 Washington Av North Minneapolis Minn
Standard Paste & Glue Co 3620 W 38th Chgo Ill
L M Thornton Mfg Co 2825 E 18th St Kansas City Mo

GLUE—resin

The Borden Co Chemical Div 350 Madison Av N Y 17 N Y
Catalin Corp of America 1 Park Av N Y 16 N Y
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Franklin Glue Co (Evertite) Columbus 15 Ohio p.252
H B Fuller Co 255 Engle St St Paul 2 Minn
C B Hewitt & Bros Inc 23 Greene N Y 13 N Y
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Le Page's Inc Gloucester Mass
The Mengel Co Inc Louisville 1 Ky p.13, 181
Monite Waterproof Glue Co 1628 2nd St N Minneapolis 11 Minn
Monsanto Chemical Co 1700 S Second St Louis 4 Mo
National Casein Sales 601 W 80th Chgo 20 Ill
Paisley Products Inc 1770 Canalport Av Chicago 16 Ill
Perkins Glue Co Lansdale Pa
Placo Div Paisley Products Inc 718 Washington Av North Minneapolis Minn
Resinous Prod & Chem Co Inc Philadelphia Pa
Standard Paste & Glue Co 3620 W 38th St Chicago Ill
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
U S Plywood Corp 55 W 44th NY 18 NY p.13, 181, 220, 257

GLUE—waterproof

Armstrong Cork Co 4704 Ross St Lancaster, Pa p.288-289
The Borden Co Chemical Div 350 Madison Av N Y 17 N Y
Consumers Glue Co St Louis 6 Mo
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Franklin Glue Co Columbus 15 Ohio p.252
C B Hewitt & Bros Inc 23 Greene N Y 13 N Y
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Koppers Co Inc Pittsburgh 19 Pa
I F Laucks Inc 911 Western Av Seattle 4 Wash
Le Page's Inc Gloucester Mass
The Mengel Co Inc Louisville 1 Ky p.13, 181
Minnesota Mining & Mfg Co St Paul 6 Minn
Monite Waterproof Glue Co 1628 2nd St N Minneapolis 11 Minn
Monsanto Chemical Co 1700 S Second St Louis 4 Mo
National Casein Sales 601 W 80th Chgo 20 Ill
Perkins Glue Co Lansdale Pa
Placo Div Paisley Products Inc 718 Washington Av North Minneapolis Minn
Resinous Prod & Chem Co Inc Philadelphia Pa
Standard Paste & Glue Co 3620 W 38th St Chicago Ill
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
United States Plywood Corp 55 West 44th NY 18 NY p.13, 181, 220, 257

GLUE POTS

Black Bros Co Inc Mendota Ill
Black & Decker Mfg Co Towson 4 Md
Chas E Francis Co Rushville Ind
Sta-Warm Electric Co Ravenna O
Vulcan Elec Co 88 Holten St Danvers Mass (electric)
A H Waage Electric Co 54 Park Place New York 7 N Y

GLUE SPREADERS

Nels J Billstrom Inc 1844 18th Av Rockford Ill
Black Bros Co Inc Mendota Ill
Chas R Francis Co Rushville Ind
Perkins Glue Co Lansdale Pa

GRATES—area

Cincinnati Iron Fence Co Inc 2110 Florence Av Cincinnati 6 O
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Metal Crafters Div Castone Products Co Cedar Rapids Iowa p.110
St Paul Corrugating Co St Paul 1 Minn
F P Smith Wire & Iron Wks Inc 2346 Clybourn Av Chgo 14 Ill
Superior Fireplace Co 1700-D East 15th St Los Angeles Cal and 601-X North Point Road Baltimore 6 Md p.385
A L Swett Iron Works Medina N Y

GRATES—boiler

Adams Co Dubuque Ia
Industrial Iron Works 6011 S W Macadam Av Portland 1 Ore
Marion Machine Foundry & Supply Co Marion Ind
D J Murray Mfg Co Wausau Wis
Western Foundry Co 2400 S W Water Av Portland 1 Ore

GRILLES—metal

Bennett-Ireland Inc 449 Pine St Norwich N Y p.386
J G Braun Co 615 S Paulina St Chicago 12 Ill
Erco Mfg Co 2368 N Elston Av Chgo 14 Ill
Fries & Son Covington Ky
Heatilator Inc 313 E Brighton St Syracuse 5 N Y p.383
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Logan Co Inc Louisville 6 Ky (iron and steel)
Majestic Co 103 Erie St Huntington Ind p.90
Metal Crafters Div Castone Products Co Cedar Rapids Iowa p.110
Newman Bros Inc 660 W 4th St Cincinnati 3 Ohio (bronze, aluminum, stainless steel)
S Parker Hdwe Mfg Corp 27 Ludlow St N Y 2 N Y
F P Smith Wire & Iron Wks Inc 2346 N Clybourn Av Chicago 14 Ill
Southern Wire & Iron Wks 441 Memorial Dr S E Atlanta Ga
Stewart Iron Wks Co Inc 1551 Stewart Block Cincinnati O
United States Register Co 344 E Burnham St Battle Creek Mich
Valley Metal Products Marseilles Ill p.135
Wheeling Corrugating Co Wheeling W Va p.441
Wickwire Spencer Steel a Div of The Colo Fuel & Iron Corp 500 5th Ave NY 18 NY

GRILLES—outdoor cooking

The Adams Co Dubuque Iowa
Champion Blower & Forge Co Lancaster Pa
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Hancock Iron Wks Pontiac 14 Mich
Industrial Iron Works 6011 S W Macadam Av Portland 1 Ore
Ironcraft Inc 810 Polhemus St San Jose 11 Cal
Majestic Co 103 Erie St Huntington Ind p.90
Southern Wire & Iron Works 441 Memorial Dr SE Atlanta Ga

GRILLES—raditor

Auer Register Co Cleveland O
J G Braun Co 615 S Paulina St Chicago 12 Ill

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Gordon Mfg Co Horicon Wis
S Parker Hdwe Mfg Corp 27 Ludlow St NY 2 NY
United States Radiator Corp Detroit Mich
United States Register Co 344 E Burnham St Battle Creek Mich

GRILLES—screen door

R G Coffman Co Inc 2809 N Orange Av Orlando Fla
W J Dennis & Co 4444 W Irving Park Chicago Ill p.142
Flour City Ornamental Iron Co Minneapolis Minn
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157, 262
S Parker Hdwe Mfg Corp 27 Ludlow St NY 2 NY
Protex Weatherstrip Mfg Co 4500 S Western Chgo Ill
Southern Wire & Iron Wks 441 Memorial Dr S E Atlanta Ga

GRINDERS—band wheel

The Filer & Stowell Co 147 Becher St Milwaukee 7 Wis
Hanchett Mfg Co Big Rapids Mich
Prescott Co Menominee Mich

GRINDERS—bench & floor

Black & Decker Mfg Co Towson 4 Md
Champion Blower & Forge Co Lancaster Pa
Cincinnati Electrical Tool Co Cincinnati Ohio
Clizbe Bros Mfg Co Plymouth Ind
Diehl Mfg Co 1124 Finderne Av Somerville N J
General Hdwe Co 3618 W Pierce St Milwaukee 4 Wis
Hanchett Mfg Co Big Rapids Mich
Luther Grinder & Tool Co Sheboygan Wis
Millers Falls Co Greenfield Mass
Newman Machine Co Greensboro N C
Porter-Cable Mach Co 1600-4 N Salina St Syracuse 8 N Y (bench only)
Speed Way Mfg Co 1834 S 52nd Av Cicero 50 Ill
The Standard Electrical Tool Co Cincinnati 4 Ohio
Stanley Electric Tools 111 Elm New Britain Conn p.253
U S Electrical Tool Co Cincinnati 14 O
Vonnegut Moulder Corp Indianapolis Ind
Walker-Turner Co Inc Plainfield N J
Wisconsin Abrasive Mfg Co 1300 E Park Pl Milwaukee 11 Wis

GRINDERS—cutter head

C K L Machinery Co 160 Harrison St Oshkosh Wis
Dependable Machine Co Greensboro N C
Hermance Machine Co Williamsport 19 Pa
Newman Machine Co Greensboro N C
Samuel J Shimer & Sons Inc 10 Race St Milton Pa p.490
Stetson-Ross Mach Co Seattle 4 Wash
S A Woods Machine Co Boston 27 Mass

GRINDERS—electric portable

Black & Decker Mfg Co Towson 4 Md
Chicago Pneumatic Tool Co 6 E 44th St New York 17 N Y
Chicago Wheel & Mfg Co 1101 W Monroe Chgo 7 Ill
James Clark Jr Electric Co Inc Louisville 3 Ky
Diehl Mfg Co 1124 Finderne Av Somerville N J
Dremel Mfg Co 2420 18th St Racine Wis
Independent Pneumatic Tool Co Aurora Ill
Mall Tool Co 7733 South Chicago Av Chgo 19 Ill
Millers Falls Co Greenfield Mass
Newman Machine Co Greensboro N C
Speed Way Mfg Co 1834 S 52nd Av Cicero 50 Ill
Stanley Electric Tools 111 Elm New Britain Conn p.253
U S Elec Tool Co Cincinnati O

GRINDERS—knife

Bay State Abrasive Products Co Westboro Mass
Boice Crane Co 930 W Central Av Toledo 6 Ohio
C K L Machinery Co 160 Harrison St Oshkosh Wis
Hanchett Mfg Co Big Rapids Mich
Mitts & Merrill Saginaw Mich
Newman Machine Co Greensboro N C
Samuel C Rogers & Co 191 Dutton Av Buffalo 11 N Y
U S Electrical Tool Co Cincinnati 14 Ohio
S A Woods Machine Co Boston 27 Mass

GRINDING COMPOUND

Clover Mfg Co Norwalk Conn
Oakite Products Inc 22 Thames N Y 6 N Y
Wayne Chemical Products Co Copeland & MCRR Detroit 17 Mich
Zip Abrasive Co 1360 W 9th St Cleveland 13 Ohio

GRINDING WHEELS

Abrasive Products Inc South Braintree Mass
American Emery Wheel Wks Providence 1 R I
Bay State Abrasive Products Co Westboro Mass
Bridgeport Safety Emery Wheel Co Bridgeport Conn
Carborundum Co Niagara Falls N Y
Chicago Wheel & Mfg Co 1101 W Monroe Chgo 7 Ill
Cortland Grinding Wheels Corp Chester Mass
Dremel Mfg Co 2420 18th St Racine Wis
Goodrich Grinding Wheel Co 1500 W Madison Chgo Ill
Luther Grinder & Tool Co Sheboygan Wis
Macklin Co Jackson Mich
Mid-West Abrasive Co 500 S Washington St Owosso Mich
Norton Co 1 New Bond St Worcester 6 Mass
Raybestos-Manhattan Inc Passaic N J
Simonds Abrasive Co Philadelphia 37 Pa
The Sterling Grinding Wheel Div of The Cleveland Quarries Co Tiffin O
Vitrified Wheel Co Westfield Mass

GROOVERS

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Huther Bros Saw Mfg Co Inc 1290 University Av Rochester 7 N Y p.486
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157, 262
Mayes Bros Tool Mfg Inc Pt Austin Mich

GUMMERS—saw

E C Atkins & Co 402 S Illinois St Indianapolis Ind
Chicago Wheel & Mfg Co 1101 W Monroe St Chgo 7 Ill
Foley Mfg Co Minneapolis Minn
Hanchett Mfg Co Big Rapids Mich
Macklin Co Jackson Mich
Mid-West Abrasive Co 500 S Washington St Owosso Mich
Norton Co 1 New Bond St Worcester 6 Mass
Samuel C Rogers & Co 191 Dutton Av Buffalo 11 N Y
Wisconsin Abrasive Mfg Co 1300 E Park Pl Milwaukee 11 Wis

GUNS—Caulking

The Biddle Co St Louis 2 Mo p.191
Blue Ridge Talc Co Inc Henry Va
Calbar Paint & Varnish Co 2612 N Martha Phil 25 Pa
Fort Pitt Chem Co 26th & Smallman Sts Pittsburgh 22 Pa
A C Horn Co 43-42 Tenth St Long Island City N Y
Kenmar Mfg Co Albert & Martha Sts Philadelphia 25 Pa
Lastik Products Co Inc Keenen Bldg Pittsburgh 22 Pa
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157, 262
Pecora Paint Co Inc Philadelphia Pa
Protex Weatherstrip Mfg Co 4500 S Western Chgo Ill
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Stewart-Warner Corp 1828 Diversey Pkwy Chicago 14 Ill
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449
Vital Products Mfg Co 7500 Quincy Av Cleveland 4 Ohio p.279

GUTTERS—metal

Barnes Metal Products Co 4425 W 16th St Chgo 23 Ill
Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Cincinnati Sheet Metal & Roofing Co Cincinnati 2 Ohio
Edwards Mfg Co 427 Culvert St Cincinnati 2 Ohio
Inland Steel Products Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446-447
Klauer Mfg Co Dubuque Iowa
LaCrosse Steel Roofing & Corrugating Co LaCrosse Wis
Mid-States Steel & Wire Co Crawfordsville Ind
Nichols Wire & Aluminum Co Davenport Iowa
Penn Supply & Metal Corp 1831 N 5th St Philadelphia 22 Pa (also fittings)
Reeves Steel & Mfg Co Dover Ohio
Republic Steel Corp Cleveland 1 Ohio
Reynolds Metals Co Bldg Products Div 2002 S 9th St Louisville 1 Ky p.93
St Paul Corrugating Co St Paul 1 Minn
Wheeling Corrugating Co Wheeling W Va p.441

GUTTERS—wood

Aloha Lumber Co Aloha Wash
Dolbeer & Carson Lbr Co San Francisco Cal
Fordyce Lumber Co Fordyce Ark p.313
Hammond Lumber Co 417 Montgomery San Francisco Cal
Holmes-Eureka Lbr Co San Francisco Cal
Wm Hulbert Mill Co Everett Wash
Long Fir Gutter Co Cadiz O
Mutual Fir Column Co Tacoma Wash
Geo J Silbernagel 8 S Michigan Av Chicago 3 Ill p.31
Union Lbr Co San Francisco Cal
Washington Mfg Co PO Box 1544 Tacoma 1 Wash
Weyerhaeuser Sales Co St Paul Minn p.62-63

HAMMERS—claw, carpenter, etc.

Champion-De Arment Tool Co Meadville Pa
C Drew & Co Inc Maple St Kingston Mass
Fairmont Tool & Forging Co 10611 Quincy Av Cleveland Ohio
John H Graham & Co Inc 105 Duane New York 8 N Y
Heller Brothers Co Newark 4 N J
Hubbard & Co 6301 Butler St Pittsburgh 1 Pa
Marion Tool Corp Marion Ind
David Maydole Tool Corp Norwich N Y
Markwell Mfg Co Inc 200 Hudson St New York 12 N Y
Mephisto Tool Co Inc Hudson N Y
Ox-Wall Tool Co 928 Broadway New York 10 N Y
Peck Stow & Wilcox Co Southington Conn
Phoenix Hdwe Mfg Co Buffalo N Y
Fayette R Plumb Inc 4837 James St Philadelphia 37 Pa
The Stanley Works New Britain Conn p.253
Vaughan & Bushnell Mfg Co 135 S La Salle Chgo Ill

HAMMERS—portable electric

Black & Decker Mfg Co Towson 4 Md
Chicago Pneumatic Tool Co 6 E 44th N Y N Y
Independent Pneumatic Tool Co Aurora Ill
Millers Falls Co Greenfield Mass
Milwaukee Electric Tool Corp 5360 W State St Milwaukee 8 Wis
Stanley Electric Tools 111 Elm New Britain Conn p.253
Wodack Electric Tool Corp 4627 W Huron Chgo Ill

HAMMERS—saw setting

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Hanchett Mfg Co Big Rapids Mich
Simonds Saw & Steel Co Fitchburg Mass
Vaughan & Bushnell Mfg Co 135 S La Salle Chgo Ill

HANDLES—broom & mop

W F Brown & Son Inc Denham Springs La
Chicago Wood & Plastic Products Co 4201 W Irving Park Chgo 41 Ill
Himmelberger-Harrison Mfg Co Cape Girardeau Mo
Holt Hardwood Co Oconto Wis p.322
McMinnville Handle Co McMinnville Tenn
Meyer Handle & Veneer Co Magazine Ala
Morgan Lbr Co Jackson Tenn
Norton Mfg Co Box 3067 Memphis 9 Tenn
Robinson Wood Turning Co Burlington Vt
Washington Handle Co Tacoma Wash
White Wood Products Co Inc Bogalusa La

HANDLES—carpenter tool

Chicago Wood & Plastic Products Co 4201 W Irving Park Chgo 41 Ill
R F Cooke Mfg Co Orange Mass
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Englewood Dowel Co Inc Merchandise Mart Chgo 54 Ill
E B Estes & Sons Inc 155 E 44th N Y N Y
Greenslate Mfg Co Rich Hill Mo
Marion Handle Mills Inc Marion Va

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HANGERS—joist & timber

Adams Co Dubuque Ia
Allen Steel Products 12911 Hillview Detroit 27 Mich
Cleveland Steel Specialty Co Inc 3765 E 91st St Cleveland 5 Ohio
Copco Steel & Engineering Co 14035 Grand River Av Detroit 27 Mich
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Duplex Hanger Co E 53rd & Lakeside Av Cleveland Ohio
Gabriel Steel Co Cat A 13700 Sherwood Detroit 12 Mich p.102-103
Ideal Hanger Co 1290 E 53rd Cleveland 14 Ohio p.135
Lanebro Mfg Co Inc Poughkeepsie N Y
Wagner Mfg Co Cedar Falls Iowa (studding sockets)

HANGERS—pipe & cabinet

Carpenter & Paterson Inc 1190 Bennington East Boston 28 Mass
Copperweld Steel Co Glassport Pa (pipe only)
Grabler Mfg Co Cleveland O
Hubbard & Co 6301 Butler St Pittsburgh 1 Pa
Illinois Malleable Iron Co 1801 Diversey Pkwy Chgo Ill
Paine Co 2951 Carroll Av Chgo 12 Ill
P Wall Mfg Supply Co Grove City Pa

HANGERS & TRACK—door

Allith-Prouty Inc Danville Ill
Calder Mfg Co 628 N Prince St Lancaster 4 Pa p.410
Clay Equipment Corp Cedar Falls Iowa
Frantz Mfg Co Sterling Ill p.410
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Lanebro Mfg Co Inc Poughkeepsie N Y
Louden Machinery Co Fairfield Ia
McKinney Mfg Co Pittsburgh Pa p.229
National Mfg Co Sterling Ill
Newhall Chain Forge & Iron Co 48 W Broadway N Y 7 N Y
The Ney Mfg Co 948 High Av Canton 4 Ohio
Olson Mfg Co Albert Lea Minn
Richards-Wilcox Mfg Co Aurora Ill p.249
The Stanley Works New Britain Conn p.253
Starline Inc Harvard Ill
Wagner Mfg Co Cedar Falls Ia
Western Products Inc New Castle Ind
Wickwire Spencer Steel A Div of The Colo Fuel & Iron Corp 500 5th Av N Y 18 N Y

HARDWARE—awning window

The Astrup Co 2937 W 25th St Cleveland 13 Ohio
Clifton Mfg Co PO Drawer 2029 Waco Tex
P & F Corbin Park St New Britain Conn
Gate City Sash & Door Co Dept L Fort Lauderdale Fla p.182-183
Reading Hardware Corp 6th & Willow Sts Reading Pa
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Vincent Whitney Co 130 10th St San Francisco 3 Cal

HARDWARE—boat dock

Central Machine Works Co 1208 Central Av Minneapolis 13 Minn

HARDWARE—cabinet

Adams-Rite Mfg Co 540 W Chevy Chase Dr Glendale 4 Cal
Akron Hdwe Mfg Corp 3616 33rd St Long Island City 1 N Y
American Cabinet Hdwe Corp Dept 1-AP Rockford Ill p.207
Cleveland Lock Wks 1292 E 53rd St Cleveland 14 Ohio p.256
Clinton Lock Co Clinton Iowa
P & F Corbin Park St New Britain Conn
Eagle Lock Co Terryville Conn p.232-233
Frantz Mfg Co Sterling Ill p.410
Hollymade Hdwe Co 4865 Exposition Blvd Los Angeles 16 Cal
Hoosier Sash & Door Co Anderson Ind p.194
Ideal Brass Works Inc 250 E 5th St St Paul 1 Minn p.248
H B Ives Co New Haven 8 Conn
Knape & Vogt Mfg Co 658 Richmond St N W Grand Rapids 4 Mich
McKinney Mfg Co Pittsburgh Pa p.229
Nat'l Brass Co Grand Rapids 2 Mich
Natl Lock Co Rockford Ill p.237
S Parker Hardware Mfg Co 27 Ludlow New York 2 N Y
Reading Hdwe Corp 6th & Willow Sts Reading Pa
Russell & Erwin Div The American Hardware Corp New Britain Conn. p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sargent & Co PO Box 1940 New Haven 9 Conn
Slaymaker Lock Co Dept 376A Lancaster Pa p.252
Standard Bronze Co Bayonne 8 N J p.255
The Stanley Works New Britain Conn p.253
Technical Glass Co Inc 2050 E 48th St Los Angeles 11 Calif

HARDWARE—casement

Adams-Rite Mfg Co 540 W Chevy Chase Dr Glendale 4 Cal
Barrows Lock Works 24th & Commonwealth Av North Chicago Ill
Casement Hdwe Co 404 N Wood Chgo Ill
Clinton Lock Co Clinton Iowa
P & F Corbin Park St New Britain Conn
Frantz Mfg Co Sterling Ill p.410
H S Getty & Co Cat E 3348 N 10th St Philadelphia 40 Pa p.235
Grant Pulley & Hdwe Co 33-36 57th Woodside L I N Y
Hoosier Sash & Door Co Anderson Ind p.194
Ideal Brass Works Inc 250 E 5th St St Paul 1 Minn p.248
H B Ives Co New Haven 8 Conn
McKinney Mfg Co Pittsburgh 12 Pa p.229
National Brass Co Grand Rapids Mich
Peabody-Acker Inc 5816 Hooper Av Los Angeles Calif
Penn Hardware Co Reading Pa
Reading Hdwe Corp 6th & Willow Sts Reading Pa
Russell & Erwin Div The American Hdw Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sager Lock Works Div of the Yale & Towne Mfg Co North Chicago Ill
Sargent & Co PO Box 1940 New Haven 9 Conn
Sharon Hdwe Mfg Co Sharon Pa
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Sterling Hdwe Mfg Co 2341 Nelson St Chicago 18 Ill
Wright Products Co St Paul Park Minn
Yale & Towne Mfg Co Stamford Conn p.222, 604

HARDWARE—clothes closet

Clinton Lock Co Clinton Iowa
P & F Corbin Park St New Britain Conn
Knape & Vogt Mfg Co 658 Richmond St N W Grand Rapids 4 Mich
McKinney Mfg Co Pittsburgh 12 Pa p.229
Russell & Erwin Div The American Hdw Corp New Britain Conn p.241
Standard Bronze Co Bayonne 8 N J p.255
The Stanley Works New Britain Conn p.253

HARDWARE—concrete forms

M & M Wire Clamp Co 983 17th Av S E Minneapolis 14 Minn
Richmond Screw Anchor Co Inc 816 Liberty Av Brooklyn 8 N Y
Sommer Metalcraft Corp Crawfordsville Ind
Williams Form Eng Corp Grand Rapids 7 Mich

HARDWARE—garage, overhead type

Allith-Prouty Inc Danville Ill
Barber-Colman Co Rockford Ill
Calder Mfg Co 628 N Prince St Lancaster 4 Pa p.410
Clay Equipment Corp Cedar Falls Iowa
Frantz Mfg Co Sterling Ill p.410
Holmes Mfg Co 211 N Madison Av Los Angeles 4 Calif
Louden Machinery Co Fairfield Ia
Phenix Mfg Co 4129 N Port Washington Rd Milwaukee 12 Wis p.411
Richards-Wilcox Mfg Co Aurora Ill p.249
Standard Bronze Co Bayonne 8 N J p.255
The Stanley Works New Britain Conn p.253
Starline Inc Harvard Ill
Tavart Co 15134 S Orizaba Av Clearwater Calif p.407
Wickwire Spencer Steel A Div of The Colorado Fuel & Iron Corp 500 Fifth Av New York 18 N Y

HARDWARE—plastic, handles & knobs only

Champion Hdwe Co Geneva O
Clinton Lock Co Clinton Iowa
Hollymade Hdwe Co 4865 Exposition Blvd Los Angeles 16 Calif
Hoosier Sash & Door Co Anderson Ind p.194
Imperial Molded Prod Corp Chgo 12 Ill
Walter S Kraus Co 43-10 48th Av Woodside N Y
McDonald Mfg Co 544 E 31st St Los Angeles 11 Cal
Modern Plastic Co Los Angeles 11 Calif
S Parker Hardware Mfg Co 27 Ludlow New York 2 N Y
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Standard Bronze Co Bayonne 8 N J p.255

HARDWARE—sliding door residence

Adams-Rite Mfg Co 540 W Chevy Chase Dr Glendale 4 Cal
Allith-Prouty Inc Danville Ill
Barrows Lock Wks 24th & Commonwealth Av North Chicago Ill
Clinton Lock Co Clinton Iowa
Colorado Fuel & Iron Corp Denver 1 Colo
P & F Corbin New Britain Conn
Frantz Mfg Co Sterling Ill p.410
Hoosier Sash & Door Co Anderson Ind p.194
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Knape & Vogt Mfg Co 658 Richmond St N W Grand Rapids 4 Mich
Lockwood Hdwe Mfg Co 35 Daniels St Fitchburg, Mass p.243
J G McKenna Inc Elkhart Ind p.225
National Mfg Co Sterling Ill
S Parker Hdwe Mfg Corp 27 Ludlow St N Y 2 N Y
Peabody-Acker Inc 5816 Hooper Av Los Angeles Calif (locks)
Richards-Wilcox Mfg Co Aurora Ill p.249
Russell-Erwin Div The American Hdwe Corp New Britain Conn p.241
Sager Lock Works North Chicago Ill
Sharon Hdwe Mfg Co Sharon Pa
Wagner Mfg Co Cedar Falls Iowa

HARDWARE—sliding, folding garage

Eberhard Mfg Co Div Eastern Malleable Iron Co Cleveland 4 Ohio
Frantz Mfg Co Sterling Ill p.410
Lawrence Bros Sterling Ill
Lockwood Hdwe Mfg Co 35 Daniels St Fitchburg Mass p.243
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157-262
McKinney Mfg Co Pittsburgh Pa p.229
National Mfg Co Sterling Ill
The Ney Mfg Co 948 High Av S W Canton 4 Ohio
Richards-Wilcox Mfg Co Aurora Ill p.249
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Sharon Hdwe Mfg Co Sharon Pa
The Stanley Works New Britain Conn p.253
Starline Inc Harvard Ill
Wagner Mfg Co Cedar Falls Ia
Wickwire Spencer Steel A Div of The Colo Fuel & Iron Corp 500 Fifth Av N Y 18 N Y

HARDWARE—storm sash & screen

A G Busch & Co Inc 2632 N Central Av Chgo 39 Ill
Clinton Lock Co Clinton Iowa
P & F Corbin Park St New Britain Conn
Frantz Mfg Co Sterling Ill p.410
Hoosier Sash & Door Co Anderson Ind p.194
Ideal Brass Works Inc 250 E 5th St St Paul 1 Minn p.248
F D Kees Mfg Co Beatrice Neb
King-Chippewa Co St Louis 4 Mo
Knape & Vogt Mfg Co 658 Richmond St N W Grand Rapids 4 Mich
Ludwig Mfg Co Inc 2401 Durand Rd Racine Wis p.257
McKinney Mfg Co Pittsburgh 12 Pa p.229
National Lock Co Rockford Ill p.237
National Mfg Co Sterling Ill
Phenix Mfg Co 4129 N Port Washington Rd Milwaukee 12 Wis p.411
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sager Lock Works North Chicago Ill
Sharon Hdwe Mfg Co Sharon Pa

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Shelby Spring Hinge Co Shelby Ohio
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Technical Glass Co Inc 2050 E 48th St Los Angeles 11 Cal
Wright Products Co St Paul Park Minn
Yale & Towne Mfg Co Stamford Conn p.222, 604

HASPS—hinge

Champion Hdwe Co Geneva O
P & F Corbin Park St New Britain Conn
Frantz Mfg Co Sterling Ill p.410
Griffin Mfg Co Erie Pa
C Hager & Sons Hinge Mfg Co St Louis Mo
Hollymade Hdwe Co 4865 Exposition Blvd Los Angeles 16 Cal
Lawrence Bros Sterling Ill
Master Lock Co 2600 N 32nd St Milwaukee 10 Wis
McKinney Mfg Co Pittsburgh Pa p.229
National Mfg Co Sterling Ill
S Parker Hardware Mfg Co 27 Ludlow New York 2 N Y
Richards-Wilcox Mfg Co Aurora Ill p.249
Russell-Erwin Div The American Hdwe Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
The Stanley Wks New Britain Conn p.253

HAUL-UPS—log

Corinth Machinery Co Corinth Miss
The Filer & Stowell Co 147 Becher St Milwaukee 7 Wis
Link-Belt Co 300 W Pershing Rd Chgo 9 Ill
Prescott Co Menominee Mich
The Wheland Co Chattanooga 2 Tenn

HEATERS—coal

American Radiator & Standard Sanitary Corp Bessemer Bldg Pittsburgh 22 Pa
Excelsior Stove & Mfg Co Quincy Ill
Gray & Dudley Co 2300 Clifton Rd Nashville 3 Tenn
International Heater Co Utica 2 N Y
King Stove & Range Co Sheffield Ala
Locke Stove Co 114 W 11th St Kansas City 8 Mo

HEATERS—concrete

American Steel Works Kansas City 8 Mo
Unique Mfg Co Inc 221 W Walton Chgo Ill

HEATERS—electric

Frank Adam Electric Co 3650 Windsor Pl St Louis Mo
Armstrong Products Corp Huntington 12 W Va
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Colloid Equipment Co Inc 50 Church St N Y 7 N Y
Eagle Electric Mfg Co Inc 23-10 Bridge Plaza South Long Island City 1 N Y
Emerson Elec Mfg Co 8100 Florissant Av St Louis 21 Mo
General Electric Co Schenectady 5 N Y
Johnson Fan & Blower Corp 1319 W Lake St Chgo 7 Ill
Landers Frary & Clark New Britain Conn
Shepler Mfg Co 1312 Sheffield St Pittsburgh 12 Pa (built-on bathroom)
Sterling-Freeland Industries Inc 4701 N Western Av Chgo 25 Ill p.423

HEATERS—gas

American Radiator & Standard Sanitary Corp Bessemer Bldg Pittsburgh 22 Pa
Bryant Heater Co 17825 St Clair Av Cleveland 10 Ohio
Excelsior Stove & Mfg Co Quincy Ill
General Electric Co Schenectady 5 N Y
Harrison Steel Cabinet Co 4718 W 5th Chgo 44 Ill
Inland Steel Products Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446-447
Norge Heat Div Borg-Warner Corp 672 E Woodbridge St Detroit 26 Mich
Payne Furnace & Supply Co Beverly Hills Cal
Ruud Mfg Co Pittsburgh 1 Pa
Surface Combustion Corp Toledo 1 Ohio

HEATERS—oil

American Gas Machine Co Box 60 Albert Lea Minn
American Radiator & Standard Sanitary Corp Bessemer Bldg Pittsburgh 22 Pa
The Coleman Co Inc Wichita 1 Kan
The Estate Stove Co Hamilton Ohio
General Electric Co Schenectady 5 N Y
International Heater Co Utica 2 N Y
The Macleod Co 2236 Bogen St Cincinnati 22 Ohio
Norge Heat Div Borg-Warner Corp 672 E Woodbridge St Detroit 26 Mich
Richmond Engineering Co Inc Richmond Va
Silent Sioux Oil Burner Corp Orange City Iowa
U S Machine Corp Lebanon Ind
York-Shipley Inc York Pa

HEATERS—radiant room

Frank Adam Electric Co 3650 Windsor Pl St Louis Mo
Beh & Co Inc 1150 Broadway N Y 1 N Y
Chattanooga Implement & Mfg Co Chattanooga 6 Tenn
Florence Stove Co Gardner Mass
Inland Steel Products Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446
Kol-Gas Heater Co Nashville 3 Tenn
Locke Stove Co 114 W 11th St Kansas City 6 Mo
Malleable Iron Range Co Beaver Dam Wis
Shapler Mfg Co 1312 Sheffield St Pittsburgh 12 Pa
Harold E Trent Co Philadelphia 27 Pa

HEATERS—tank

Adams Co Dubuque Ia
Beall Pipe & Tank Corp Portland Ore
Brower Mfg Co Quincy Ill
W E Caldwell Co Louisville 8 Ky
Dempster Mill Mfg Co Beatrice Neb
Farwell Ozmun Kirk & Co St Paul 1 Minn
H D Hudson Mfg Co Dept D-16 589 E Illinois St Chicago 11 Ill
Richmond Engineering Co Inc Richmond Va
Siebring Mfg Co George Ia
Harold E Trent Co Philadelphia 27 Pa

HEATERS—water

American Gas Machine Co Box 60 Albert Lea Minn
American Radiator & Standard Sanitary Corp Pittsburgh 22 Pa
Bryant Heater Co 17825 St Clair Av Cleveland 10 Ohio
Chrysler Corporation Airtemp Division Dayton 1 Ohio
Clayton & Lambert Mfg Co 1701 Dixie Highway Louisville 10 Ky
The Coleman Co Inc Wichita 1 Kan
Conant Bros Co 34 Portland St Boston 14 Mass
Florence Stove Co Gardner Mass
Frigidaire Div General Motors Corp Dayton 1 Ohio
General Electric Co Schenectady 5 N Y
General Water Heater Corp Burbank Calif
Gilbert & Barker Mfg Co West Springfield Mass
Hotpoint Inc 5600 W Taylor St Chicago 44 Ill
International Heater Co Utica 2 N Y
Landers Frary & Clark New Britain Conn
Nash-Kelvinator Corp Detroit Mich
Norge Div Borg-Warner Corp 672 E Woodbridge St Detroit 26 Mich
Richmond Engineering Co Inc Richmond 5 Va
Ruud Mfg Co Pittsburgh Pa
Servel Inc Evansville 20 Ind (gas)
Standard Gas Equipment Corp Baltimore Md
Timken Silent Automatic Div The Timken Detroit Axle Co Detroit 32 Mich
United States Radiator Corp Detroit Mich

HEATING—steam or hot water

American Radiator & Standard Sanitary Corp Pittsburgh 22 Pa
Bryant Heater Co 17825 St Clair Av Cleveland 10 Ohio
Burnham Boiler Corp Irvington-on-Hudson N Y
Chrysler Corp Airtemp Div Dayton 1 Ohio
Colloid Equipment Co Inc 50 Church St NY 7 NY
Excelsior Stove & Mfg Co Quincy Ill
General Electric Co Schenectady 5 N Y
Gilbert & Barker Mfg Co West Springfield Mass
International Heater Co Utica 2 N Y
The King Co Owatonna Minn
H C Little Burner Co 2nd & Lincoln Sts San Rafael Calif
Norge Heat Div Borg-Warner Corp 672 E Woodbridge St Detroit 26 Mich
Penn Boiler & Burner Mfg Corp Lancaster Pa
Richmond Radiator Co 19 E 47th St NY 17 NY
Surface Combustion Corp Toledo 1 Ohio
Trane Co La Crosse Wis
Williams Oil-O-Matic Div Eureka Williams Corp Bloomington Ill
York-Shipley Inc York Pa

HEATING—warm air

American Gas Machine Co Box 60 Albert Lea Minn
American Radiator & Standard Sanitary Corp Pittsburgh 22 Pa
Bryant Heater Co 17825 St Clair Av Cleveland 10 Ohio
Chrysler Corp Airtemp Div Dayton 1 Ohio
Excelsior Stove & Mfg Co Quincy Ill
General Electric Co Schenectady 5 N Y
Gilbert & Barker Mfg Co West Springfield Mass
International Heater Co Utica 2 N Y
Morrison Steel Products Inc Buffalo 7 N Y
Norge Div Borg-Warner Corp Detroit 26 Mich
Payne Furnace & Supply Co Beverly Hills Cal
Penn Boiler & Burner Mfg Corp Box 1079 Lancaster Pa
Richmond Radiator Co 19 E 47th St NY 17 NY
Round Oak Co Dowagiac Mich
Surface Combustion Corp Toledo 1 Ohio
Williams Oil-O-Matic Div Eureka Williams Corp Bloomington Ill
Williamson Heater Co 4558 Marburg Av Cincinnati 9 Ohio
York-Shipley Inc York Pa

HINGES—butt

American Cabinet Hdwe Corp Dept 1-AP Rockford Ill p.227
P & F Corbin Park St New Britain Conn
Fiwale Equipment Mfg Co 165 Church NY 7 NY
Frantz Mfg Co Sterling Ill p.410
Griffin Mfg Co Erie Pa
C Hager & Sons Hinge Mfg Co St Louis Mo
Hoosier Sash & Door Co Anderson Ind p.194
Ideal Brass Works Inc 250 E 5th St St Paul 1 Minn p.248
Lawrence Bros Sterling Ill
McKinney Mfg Co Pittsburgh Pa p.229
National Lock Co Rockford Ill p.237
National Mfg Co Sterling Ill
Norwalk Lock Co 395 Broadway NY 13 NY
S Parker Hdwe Mfg Co 27 Ludlow St New York 2 N Y
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Sharon Hardware Mfg Co Sharon Pa
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Wagner Mfg Co Cedar Falls Ia

HINGES—cabinet

Akron Hardware Mfg Corp 3616 33rd St Long Island City 1 N Y
American Brass Goods Co Grand Rapids 2 Mich
American Cabinet Hdwe Corp Rockford Ill p.227
Austin & Eddy Inc Box 1504 Boston 4 Mass
P & F Corbin Park St New Britain Conn
Frantz Mfg Co Sterling Ill p.410
L F Grammes & Sons Inc Allentown Pa
Griffin Mfg Co Erie Pa
Hollymade Hdwe Co 4865 Exposition Blvd Los Angeles 16 Calif
McKinney Mfg Co Pittsburgh Pa p.229
Natl Brass Co Grand Rapids Mich
National Hdwe Co 86-30 103rd Av Wdhvn NY NY
National Mfg Co Sterling Ill
S Parker Hdwe Mfg Co 27 Ludlow New York 2 N Y
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
The Stanley Wks New Britain Conn p.253

HINGES—gate

P & F Corbin Park St New Britain Conn
Frantz Mfg Co Sterling Ill p.410
Keystone Steel & Wire Co Peoria Ill p.397
McKinney Mfg Co Pittsburgh 12 Pa p.229
National Mfg Co Sterling Ill

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Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Sharon Hardware Mfg Co Sharon Pa
Standard Bronze Co Bayonne 8 N J p.255
The Stanley Works New Britain Conn p.253

HINGES—spring door

Bommer Spring Hinge Co Inc 263 Classon Brooklyn 5 N Y
Chicago Spring Hinge Co 1500 W Carroll Chgo 7 Ill
Cleveland Lock Wks Div of Consolidated Iron-Steel Mfg Co 1202 E 53rd St Cleveland 14 Ohio p.256
Frantz Mfg Co Sterling Ill p.410
S Parker Hardware Mfg Co 27 Ludlow St New York 2 N Y
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Sharon Hdwe Mfg Co Sharon Pa
Shelby Spring Hinge Co Shelby O
The Stanley Wks New Britain Conn p.253

HINGES—strap

Akron Hdwe Mfg Corp 3616 33rd St Long Island City 1 N Y
P & F Corbin Park St New Britain Conn
Frantz Mfg Co Sterling Ill p.410
Griffin Mfg Co Erie Pa
C Hager & Sons Hinge Mfg Co St Louis Mo
Lawrence Bros Sterling Ill
McKinney Mfg Co Pittsburgh Pa p.229
Natl Brass Co Grand Rapids Mich
National Mfg Co Sterling Ill
S Parker Hardware Mfg Corp 27 Ludlow St New York 2 N Y
Richards-Wilcox Mfg Co Aurora Ill p.249
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Sharon Hdwe Mfg Co Sharon Pa
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Standard Bronze Co Bayonne 8 N J p.255
The Stanley Wks New Britain Conn p.253
Wagner Mfg Co Cedar Falls Iowa

HOG HOUSE EQUIPMENT

Butler Mfg Co Kansas City Mo
Clay Equipment Corp Cedar Falls Ia
H D Hudson Mfg Co Dept D-16 589 E Illinois Chgo 11 Ill
James Mfg Co Ft Atkinson Wis
Louden Machinery Co Fairfield Ia
Ney Mfg Co Canton 4 Ohio
Starline Inc Harvard Ill

HOISTS—chain

Chisholm Moore Hoist Corp Tonawanda N Y
The Cleveland Crane & Engineering Co 5866 E 283rd St Wickliffe Ohio
Coffing Hoist Co Danville Ill
Ford Chain Block Div American Chain & Cable Co Inc Philadelphia 25 Pa
National Screw & Mfg Co Chester Hoist Div Lisbon Ohio
Reading Chain & Block Corp 2100 Adams St Reading Pa
Shepard Niles Crane & Hoist Corp Montour Falls N Y
Wright Mfg Div American Chain & Cable Co Inc York Pa
Yale & Towne Mfg Co Phil Pa p.222, 604

HOISTS—drum

American Hoist & Derrick Co 63 So Robert St Paul 1 Minn
Bennett-Ireland Inc 449 Pine St Norwich N Y p.386
Bridgeport Chain & Mfg Co Bridgeport Conn
C H & E Mfg Co 3849 N Palmer St Milwaukee 12 Wis
Chisholm Moore Hoist Corp Tonawanda N Y
Cleveland Crane & Engineering Co Wickliffe Ohio
Clyde Iron Works Inc Duluth 1 Minn
Construction Machinery Co Waterloo Iowa
Electro Lift Inc 32 Church St NY 7 NY
Godfrey Conveyor Co Elkhart Ind
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105
Shepard Niles Crane & Hoist Corp Montour Falls N Y
Stimel Winch Co 37-24 33rd St Long Island City 1 N Y
Washington Iron Works Seattle 4 Wash
Yale & Towne Mfg Co Phil Pa p.222, 604

HOISTS—electric

American Engineering Co Kensington Station Philadelphia 25 Pa
American Hoist & Derrick Co 63 S Robert St Paul 1 Minn
Bridgeport Chain & Mfg Co Bridgeport 1 Conn
C H & E Mfg Co 3849 N Palmer St Milwaukee 12 Wis
Cleveland Crane & Engineering Co Wickliffe Ohio
Clyde Iron Works Inc Duluth 1 Minn
Coffing Hoist Co Danville Ill
Detroit Hoist & Machine Co 8201 Morrow St Detroit 11 Mich
Electro Lift Inc 32 Church New York 7 N Y
Godfrey Conveyor Co Elkhart Ind
Harnischfeger Corp Milwaukee Wis
Lisbon Hoist & Crane Co Lisbon O
Reading Chain & Block Corp 2100 Adams St Reading Pa
Shepard Niles Crane & Hoist Corp Montour Falls N Y
Stephens-Adamson Mfg Co Aurora Ill
Wright Mfg Div American Chain & Cable Co Inc York Pa
The Yale & Towne Mfg Co Philadelphia 24 Pa p.222, 604

HOISTS—gasoline

American Hoist & Derrick Co 63 S Robert St Paul 1 Minn
Bennett-Ireland Inc 449 Pine St Norwich N Y p.386
C H & E Mfg Co 3849 N Palmer St Milwaukee 12 Wis
Novo Engine Co Lansing 5 Mich
Stimel Winch Co 37-24 33rd St Long Island City 1 N Y

HOISTS—hydraulic dumping

Anthony Co Streator Ill
Chisholm-Moore Hoist Corp Tonawanda N Y
Galion Allsteel Body Co Galion O
Heil Co Milwaukee Wis
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105
Perfection Steel Body Co Galion Ohio
St Paul Hydraulic Hoist Div Gar Wood Industries Inc 2207 University Av S E Minneapolis 14 Minn
Yale & Towne Mfg Co Phil Pa p.222, 604

HOISTS—rope

American Hoist & Derrick Co 63 S Robert St Paul 1 Minn
Bennett-Ireland Inc 449 Pine St Norwich N Y p.386
C H & E Mfg Co 3849 N Palmer St Milwaukee 12 Wis
Lanebro Mfg Co Inc Poughkeepsie N Y
The Ney Mfg Co 948 High Av S W Canton 4 Ohio
Shepard Niles Crane & Hoist Corp Montour Falls N Y

HOME APPLIANCES

Admiral Corp 3800 W Cortland Chgo 47 Ill
Apex Rotarex Corp Cleveland 10 Ohio
Blackstone Corp Jamestown N Y
The Coolerator Co PO Box 399 Duluth 1 Minn
Frigidaire Div General Motors Corp Dayton 1 Ohio
General Electric Co Schenectady 5 N Y
Hotpoint Inc 5600 W Taylor St Chicago 44 Ill
Landers Frary & Clarke New Britain Conn
Mabey Electric Co Peoria Ill
The Pioneer Co Pittsburgh 22 Pa

HOME COOLERS

Trane Co LaCrosse Wis
Edgar T Ward Inc 7779 W Lake St River Forest Ill

HOME WORKSHOP EQUIPMENT

Boice Crane Co 930 W Central Av Toledo 6 Ohio
Buss Machine Works Holland Mich
Clarke Sanding Machine Co Muskegon Mich
Delta Mfg Co Milwaukee 1 Wis
Forman Ford & Co 111 S 2nd St Minneapolis 1 Minn
Mall Tool Co 7733 South Chicago Av Chgo 19 Ill
Millers Falls Co Greenfield Mass
Milwaukee Electric Tool Corp 5360 W State St Milwaukee 8 Wis
C S Osborne & Co Harrison N J
Parks Woodworking Machine Co Cincinnati Ohio
Pratt & Whitney West Hartford Conn
Stanley Electric Tools New Britain Conn p.253
Yates American Machine Co Beloit Wis

HOODS—ventilating kitchen

Binks Mfg Co 3124 W Carroll Av Chicago 12 Ill
Connecticut Blower Co P O Box 884 Hartford 1 Conn
Vent-A-Hood Co Dallas 9 Tex

HOOKS—coat

Amerline Inc 1753 N Honore St Chicago 22 Ill
The Autoyre Co Oakville Conn
Barrows Lock Works 24th & Commonwealth Av North Chicago Ill
The Columbus Brass Mfg Co 620 Dublin Ave Columbus 16 Ohio
P & F Corbin Park St New Britain Conn
Frantz Mfg Co Sterling Ill p.410
H B Ives Co New Haven Conn
Peabody-Acker Inc 5816 Hooper Ave Los Angeles Calif
Penn Hdwe Co Reading Pa
Phoenix Lock Co Newark 7 N J
Russel & Erwin Div The American Hdwe Corp New Britain Conn p.241
Sager Lock Works North Chicago Ill
Standard Bronze Co Bayonne 8 N J p.255

HOSE—air compressor

Acme Rubber Mfg Co Trenton N J
Boston Woven Hose & Rubber Co Cambridge Mass
Broadway Rubber Mfg Co 529 E Broadway Louisville 2 Ky
Cincinnati Rubber Mfg Co 4900 Franklin Av Cincinnati 12 Ohio
Continental Rubber Wks Erie Pa
Gates Rubber Co 999 S Broadway Denver 17 Colo
Goodall Rubber Co 5 S 36th Philadelphia 4 Pa
The B F Goodrich Co Akron Ohio
Independent Pneumatic Tool Co Aurora Ill
Raybestos-Manhattan Inc Passaic N J
Republic Rubber Div Lee Rubber & Tire Corp Youngstown 1 Ohio
Thermoid Co Trenton N J

HOSE—garden, industrial

A B C Steel Equipment Co Inc 205 E 22nd St N Y 10 N Y
Acme Rubber Mfg Co Trenton N J
Boston Woven Hose & Rubber Co Cambridge Mass
Broadway Rubber Mfg Co 529 E Broadway Louisville 2 Ky
Cincinnati Rubber Mfg Co 4900 Franklin Av Cincinnati 12 Ohio
Continental Rubber Works Erie Pa
The DeVilbiss Co 300 Phillips Av Toledo 1 Ohio
Gates Rubber Co 999 S Broadway Denver 17 Colo
Goodall Rubber Co 5 S 36th Philadelphia 4 Pa
The B F Goodrich Co Akron Ohio
Raybestos-Manhattan Inc Passaic N J
Republic Rubber Div Lee Rubber & Tire Corp Youngstown 1 Ohio
Thermoid Co Trenton 6 N J
United States Rubber Co 1230 6th Av New York 20 N Y

HOSE—linen fire

American LaFrance-Foamite Corp Elmira N Y
Boston Woven Hose & Rubber Co Boston Mass
Continental Rubber Works Erie Pa
Elkhart Brass Mfg Co Inc Elkhart Ind
General Detroit Corp 2272 E Jefferson Av Detroit 7 Mich
Goodall Rubber Co 5 S 36th Philadelphia 4 Pa
Raybestos-Manhattan Inc Passaic N J
United States Rubber Co 1230 6th Av New York 20 N Y
Wirt & Knox Mfg Co Phil 32 Pa

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HOUSE NUMBERS

Allen Steel Products 12911 Hillview Detroit 27 Mich
J Chester & Sons 41 Varick Av Brooklyn 6 N Y
Columbus Brass Mfg Co 620 Dublin Av Columbus 16 Ohio
P & F Corbin Park St New Britain Conn
H B Ives Co New Haven 8 Conn
Premax Products Div Chisholm-Ryder Co Inc 4601 Highland Av Nigara Falls N Y
Reflecto Letters 411 E 101 St New York 29 N Y (luminous & black plastic)
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Safe Padlock & Hdwé Co Lancaster Pa
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Standard Bronze Co Bayonne 8 N J p.255

INCINERATORS—garbage

Detroit-Michigan Stove Co Detroit Mich
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Ewing Incinerator Co 5121 Ravenswood Av Chgo 40 Ill
J W Fiske Iron Works 78 Park Place New York 7 N Y
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Kerner Incinerator Div Morse Boulger Destruction Co 205 E 42nd New York 17 N Y
Majestic Co 103 Erie St Huntington Ind p.90
Pittsburgh Incinerator Co 131 Beam Way Pittsburgh 11 Pa
Renown Stove Co Owosso Mich
Wheeling Corrugating Co Wheeling W Va p.441

INSECTICIDES

Adco Inc Sedalia Mo
Agkem Inc Quincy Ill
The American Agricultural Chemical Co 50 Church New York 7 N Y
American Cyanamid & Chemical Corp 30 Rockefeller Plaza New York 20 N Y
The Bengal Co 214 St Nicholas Av New York 27 N Y
Blue Ridge Talc Co Inc Henry Va
Carbola Chemical Co Inc Natural Bridge N Y
Carbolineum Wood Preserving Co 508 W Highland Av Milwaukee 3 Wis
Chemical Supply Co 225 Plymouth Bldg Cleveland 15 Ohio
Colloid Equipment Co Inc 50 Church St NY 7 NY
Cre-O-Tox Chem Co Memphis Tenn
Crescent Products Co Terre Haute Ind
The Dow Chemical Co Midland Mich
E I du Pont de Nemours & Co Inc Wilmington 98 Del
Geo C Gordon Chemical Co Kansas City 7 Mo
Harrop Chemical Co 135 Hoboken Av Jersey City 2 N J
J A Meinhardt & Co 2622 S Shields Av Chgo Ill
Monsanto Chemical Co 1700 S Second St Louis 4 Mo
The Neville Co Neville Island Pittsburgh 25 Pa

INSERTS—concrete

Carpenter & Paterson Inc 1190 Bennington East Boston 28 Mass
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
The Globe Stamping Div Hupp Motor Car Corp Cleveland 2 Ohio
Grabler Mfg Co Cleveland O
Lakeside Malleable Casting Co Racine Wis
Merwin Mfg Co Erie Pa
Richmond Screw Anchor Co Inc 816 Liberty Av Brooklyn 8 N Y
Sterling Foundry Co Inc Sterling Ill
Truscon Steel Co Youngstown 1 Ohio
Union Steel Prod Co Albion Mich

INSTRUMENTS — indicating, recording & controlling

L R Bradley & Co 25 W 45th St New York 19 N Y p.484
Foxboro Co Foxboro Mass
General Electric Co Schenectady N Y
Minneapolis Honeywell Reg Co Minneapolis Minn
Newark Boiler Regulator Co Inc 15 Ward St Bloomfield N J
C J Tagliabue Corp (NJ) 614 Frelinghuysen Av Newark 5 N J
Taylor Instrument Co Rochester 1 N Y

INSULATION—blanket or batt type

Acme Asbestos Covering & Flooring Co 246 N Elizabeth Chgo 7 Ill
Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Barnhardt Mfg Co PO Box 2176 Charlotte 1 N C (cotton)
Barrett Div Allied Chemical & Dye Corp 40 Rector NY 6 NY p.351
S T Burton Co Builders Bldg Chicago 1 Ill
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
The Carney Co Inc 125 S 5th St Minneapolis Minn
Celotex Corp 120 S LaSalle Chgo 3 Ill (batt type only) p.297, 329, 369, 439
Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa (also Pouring)
Gilman Bros Co Gilman 6 Conn p.367
Hoosier Sash & Door Co Anderson Ind p.194
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Insl-Cotton Div Taylor Bedding Mfg Co Taylor Tex p.371
Johns-Manville Corp Box 290 22 E 40th NY 16 NY p.280, 301, 347, 375
Kimberly-Clark Corp Neenah Wis p.360-361
Lockport Cotton Batting Co Lockport N Y p.376-377
Masonite Corp Dept AL-4 111 W Washington Chgo 2 Ill p.287
National Cotton Council Dept L Memphis 1 Tenn
National Gypsum Co Buffalo N Y p.298-299
Owens-Corning Fiberglas Corp Dept 2020 Toledo 1 Ohio p.364-365
Reynolds Metals Co Richmond Va p.93
Standard Asbestos Mfg Co 860 Evergreen Av Chgo 22 Ill
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293
Wood Conversion Co Dept 120-49 First Natl Bank Bldg St Paul 1 Minn p.372-373

INSULATION—blowing wool

Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Barrett Div Allied Chemical & Dye Corp 40 Rector St New York 6 N Y p.351
S T Burton Co Builders Bldg Chicago 1 Ill
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
The Carney Co Inc 125 S 5th St Minneapolis Minn
Celotex Corp 120 S LaSalle Chgo 3 Ill p.297, 329, 369, 439
Coast Insulating Corp 634 S Western Av Los Angeles 5 Cal
Ford Roofing Products Co 170 W Washington Chgo 2 Ill
Johns-Manville Corp Box 290 22 E 40th St New York 16 N Y p.280, 301, 347, 375
National Gypsum Co Buffalo 2 N Y p.298-299
Owens-Corning Fiberglas Corp Dept. 2020 Toledo 1 Ohio p.364-365
Pal-O-Pak Insulation Co Hartland Wis
Riverton Lime & Stone Co Inc Riverton Va
United States Gypsum Co 300 W Adams St Chicago 6 Ill p.293

INSULATION—board or sheet

Acme Asbestos Covering & Flooring Co 246 N Elizabeth Chgo 7 Ill
American Structural Products Co Toledo 1 Ohio
Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Asbestos Asphalt & Insulation Mfg Co 2100 Fullerton Chgo 47 Ill
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Celotex Corp 120 S LaSalle Chgo 3 Ill p.297, 329, 369, 439
Durisol Inc 420 Lexington N Y 17 N Y
Dyke Bros Little Rock Ark p.192
Fir-Tex Portland Ore
Hawaiian Cane Products Ltd Culver City Calif
Homasote Co Trenton 3 N J
Hoosier Sash & Door Co Anderson Ind p.194
Indianapolis Plywood Corp 1300 Beecher St Indianapolis Ind p.60
Insulite Div Minnesota & Ontario Paper Co Dept AL-49 500 Baker Arcade Bldg Minneapolis 2 Minn p.285
Johns-Manville Corp Box 290 22 E 40th St New York 16 N Y p.280, 301, 347, 375
Keystone Asphalt Products Co 43 E Ohio St Chicago 11 Ill
National Gypsum Co Buffalo 2 N Y p.298-299
Owens-Corning Fiberglas Corp Dept 2020 Toledo 1 Ohio p.364-365
Plastergon Wallboard Co P O Box 40 Sta B Buffalo 7 N Y
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293
Wood Conversion Co Dept 120-49 First Natl Bank Bldg St Paul 1 Minn p.372-373

INSULATION—glass (foam)

Armstrong Cork Co 4704 Ross St Lancaster Pa. p.288-289
Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa (fiber)
Pittsburgh Corning Corp 632 Duquesne Way Pittsburgh 22 Pa
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.267

INSULATION—loose fill

Acme Asbestos Covering & Flooring Co 246 N Elizabeth Chgo 7 Ill
Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Barrett Div Allied Chemical & Dye Corp 40 Rector N Y 6 N Y p.351
S T Burton Co Builders Bldg Chicago 1 Ill
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
The Carney Co Inc 125 S 5th St Minneapolis Minn
Celotex Corp 120 S La Salle Chgo 3 Ill p.297, 329, 369, 439
Ford Roofing Products Co 111 W Washington Chgo 2 Ill
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Johns-Manville Corp Box 290 22 E 40th NY 16 NY p.280, 301, 347, 375
Mission Lime Products Corp 841 Ducommun St Los Angeles 12 Calif
National Gypsum Co Buffalo 2 N Y p.298-299
Owens-Corning Fiberglas Corp Dept 2020 Toledo 1 Ohio p.364-365
Pal-O-Pak Insulation Co Hartland Wis
Sno-Lite Products Co 232 W First St Reno Nevada
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293
Western Mineral Products Co Milwaukee Wis
Zonolite Company Dept ALM-49 135 S La Salle St Chgo Ill p.263

INSULATION—plastic

Acme Asbestos Covering & Flooring Co 246 N Elizabeth Chgo 7 Ill
American Phenolic Corp 1830 S 54th Av Cicero 50 Ill
The Borden Co Chem Div 350 Madison Av NY 17 NY
The Dow Chemical Co Midland Mich
E I du Pont de Nemours & Co Inc Wilmington 98 Del
A C Horn Co 43-42 Tenth Long Island City 1 NY
Irvington Varnish & Insulator Co Irvington 11 N J
Mexico Refractories Co Mexico Missouri
Mixtite Corp North Haven Conn
Sprayo-Flake Co 2715 W Irving Park Chgo Ill
Standard Asbestos Mfg Co 860 Evergreen Av Chgo 22 Ill
Western Mineral Products Co Milwaukee 4 Wis
Zonolite Company Dept ALM-49 135 S La Salle St Chgo Ill p.263

INSULATION—reflective type

Aetna Plywood & Veneer Co 1732 Elston Av Chicago 22 Ill p.11
American Flange & Mfg Co Inc 30 Rockefeller Plaza NY 20 NY
S T Burton Co Builders Bldg Chicago 1 Ill
Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
Gilman Bros Co Gilman 6 Conn p.367
Infra Insulation Inc Dept D 10 Murray St NY 7 NY
Insl-Cotton Div Taylor Bedding Mfg Co Taylor Tex p.371
Lockport Cotton Batting Co Lockport N Y p.376-377
Protective Papers Inc Union Ill p.354
Reynolds Metals Co Bldg Products Div 2002 S 9th St Louisville 1 Ky p.93
Richkraft Co 228 N La Salle Chicago 1 Ill p.341
Silvercote Products Inc 161 E Erie Chgo 11 Ill
The Sisalkraft Co Dept AL 205 W Wacker Dr Chicago 6 Ill p.335
United States Rubber Co 1230 6th Av New York 20 N Y

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INSULATION—spray-on

Kensbey & Mattison Co Ambler Pa p.325
Mexico Refractories Co Mexico Mo
Minnesota Mining & Mfg Co St Paul 6 Minn
Sprayo-Flake Co 2715 W Irving Pk Chgo Ill

INSULATION—wool

Acme Asbestos Covering & Flooring Co 246 N Elizabeth Chgo 7 Ill
Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Barrett Div Allied Chem & Dye Corp 40 Rector NY 6 NY p.351
S T Burton Co Builders Bldg Chicago 1 Ill
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
The Carney Co Inc 125 S 5th St Minneapolis Minn
Celotex Corp 120 S La Salle Chgo 3 Ill p.297, 329, 369, 439
Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
Hoosier Sash & Door Co Anderson Ind p.194
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
The Mumford Co Inc 961 Confederate Av S E Atlanta Ga
National Gypsum Co Buffalo 2 N Y p.298-299
Owens-Corning Fiberglas Corp Dept 2020 Toledo O (mineral) p.364-365
Pacific Lumber Co 100 Bush St San Francisco Calif (redwood)
Wood Conversion Co Dept 120-49 First Natl Bank Bldg St Paul 1 Minn p.372-373

INSURANCE

Central Mfrs' Mutual Insurance Co Van Wert Ohio p.462
Employers Mutual Liability Insurance Co of Wis Wausau Wis
Indiana Lumbermens Mutual Insurance Co Indianapolis 9 Ind p.462
Lumber Mutual Fire Ins Co 632 Beacon St Boston 15 Mass p.462
Lumbermens Mutual Insurance Co Mansfield O p.462
Lumbermens Mutual Casualty Co 4750 Sheridan Rd Chgo Ill p.465
Lumbermen's Underwriting Alliance R A Long Bldg Kansas City 6 Mo p.465
Northwestern Mutual Fire Association Seattle 1 Wash p.462
Pennsylvania Lumbermen's Mutual Fire Insurance Co Market St Natl Bank Bldg Philadelphia 7 Pa p.462
U S Epperson Underwriting Co 1000 R A Long Bldg Kansas City 6 Mo p.465

INTER-COMMUNICATION SYSTEMS

Edwards & Co Norwalk Conn
Executone Inc D-1 415 Lexington Av New York 17 N Y
Kellogg Switchboard & Supply Co 6650 S Cicero Chgo Ill
Select-O-Phone Co Div of Screw Mach Prod Co Inc 1012 Eddy Providence 1 R I
Signal Eng & Mfg Co 154 W 14 NY NY
Talk-A-Phone Co 1512 S Pulaski Rd Chicago 23 Ill

IRONERS—electric

Apex Rotarex Corp Cleveland 10 Ohio
Armstrong Products Corp Huntington W Va
Chicago Dryer Co 2210 N Pulaski Rd Chgo 39 Ill
General Electric Co Schenectady 5 N Y
Hotpoint Inc 5600 W Taylor St Chicago 44 Ill
Landers Frary & Clark New Britain Conn
Westinghouse Electric Corp 306 Fourth Av Pittsburgh 30 Pa p.430

IRONING BOARDS

Angel Novelty Co 340 Broad St Fitchburg Mass
Carr Adams & Collier Co Dubuque Ia p.147
Chicago Curtain Stretcher Co 1127 W 37th Chgo 9 Ill
Chicago Dryer Co 2210 N Pulaski Rd Chgo 39 Ill
J R Clark Co Spring Park Minn
Cole Mfg Co PO Box 2657 Memphis 2 Tenn p.192
Curtis Companies Clinton Ia
Davis Plywood Corp Cleveland 11 Ohio
L H Eubank & Son 433 W Redondo Blvd Inglewood Calif
Howard Mfg Co Kent Wash
Huttig Mfg Co Box AL Muscatine Iowa p.171
Walter S Kraus Co 43-10 48th Av Woodside N Y
Lyon Metal Products Inc Aurora Ill
McGrath-St Paul Co 242 E Fifth St St Paul 1 Minn
Marquart Millwork Co Oshkosh Wis p.148
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
Western Pine Mfg Co Ltd Spokane 7 Wash p.197
Woodenware Products Corp 122 N 7th St St Louis 1 Mo
Zoss Ladder & Mfg Co Portland 1 Ore

IRONS—soldering

Wm L Barrett Co 34 School St Bristol Conn
Eagle Electric Mfg Co Inc 23-10 Bridge Plaza South Long Island City N Y
Electric Soldering Iron Co Inc Deep River Conn
Everhot Mfg Co Maywood Ill
Hexacon Elec Co Roselle Pk N J (electric)
Ideal Industries Inc Sycamore Ill
Lenk Mfg Co 30-38 Cummington St Boston 15 Mass
The Stanley Wks New Britain Conn p.253
Vulcan Elec Co Danvers Mass (electric)
A H Waage Electric Co 54 Park Place New York 7 N Y

JACKS—adjustable wood-steel

Breyer Bros Whiting & Co Waupun Wis
Buda Co Harvey Ill
M & M Wire Clamp Co 983-17th Av S E Minneapolis 14 Minn
Newark Ladder & Bracket Co Inc Clark (Rahway) N J
N P Spurgeon Co 20 N Wacker Dr Chicago 6 Ill
John S Tilley Ladders Co Inc Watervliet N Y
United Metal Products Inc 865 S High St Akron 11 Ohio

JACKS—house moving

American Skein & Fdry Co Racine Wis
Buda Co Harvey Ill
Joyce Cridland Co 2027 E 1st St Dayton 3 Ohio
Duff-Norton Mfg Co Pittsburgh Pa
N B Spurgeon Co 20 N Wacker Dr Chicago 6 Ill
Stimmel Winch Co 37-24 33rd Long Island City 1 N Y
A L Swett Iron Works Medina N Y
Templeton Kenly & Co 1020 S Central Chgo Ill

JACKS—ladder

W W Babcock Co Inc Bath N Y
Bauer Mfg Co Wooster O
Breyer Bros Whiting & Co Waupun Wis
Davenport Ladder Co 2365 McKinley Av Davenport Iowa
Holland Ladder & Mfg Co Holland Mich
Holm's Mfg Co of Ohio 106 N Main St Akron 8 Ohio
Howard Mfg Co Kent Wash
Michigan Ladder Co Ypsilanti Mich
Ridgely Trimmer Co Springfield Ohio
The Sabin Machine Co 6536 Carnegie Av Cleveland 3 Ohio
John S Tilley Ladders Co Inc Watervliet N Y
Warner Mfg Co 801 16th Av SE Minneapolis 14 Minn
Woodenware Products Corp 122 N 7th St St Louis 1 Mo

JALOUSIES

The Andal Mfg Co 122 Ash Akron 8 Ohio
Gate City Sash & Door Co Dept L Fort Lauderdale Fla p.182-183
The F C Russell Co 1836 Euclid Av Cleveland 15 Ohio (metal)

JOINTERS—saw

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Boice Crane Co 930 W Central Av Toledo 6 Ohio
Crescent Machine Co Leetonia O
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Heston & Anderson Div St Paul Fdry & Mfg Co 606 W Kirkwood St Fairfield Ia
L Power & Company 2815 Oakford Philadelphia 46 Pa
Prescott Co Menominee Mich
Stetson-Ross Machine Co Seatle 4 Wash
J D Wallace & Co 153 S California Chgo 12 Ill
Yates-American Machine Co Beloit Wis

JOIST ANGLES

Allen Steel Products 12911 Hillview Detroit 27 Mich
Commercial Shearing & Stamping Inc 5767 W 6th St Chicago 38 Ill
Copco Steel & Engineering Co 14035 Grand River Blvd Detroit 27 Mich
Duplex Hanger Co E 53rd & Lakeside Av Cleveland O
Ideal Hanger Co 1290 E 53rd St Cleveland 14 Ohio p.135
Laclede Steel Co St Louis 1 Mo

KEY BLANKS

Atlas-Ansonia Co North Haven Conn
Barrows Lock Wks 24th & Commonwealth North Chicago Ill
Clinton Lock Co Clinton Iowa
P & F Corbin Park St New Britain Conn
Lockwood Hdwe Mfg Co Fitchburg Mass p.243
Master Lock Co 2600 N 32nd Milwaukee 10 Wis
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Slaymaker Lock Co Dept 376A Lancaster Pa p.252
Yale & Towne Mfg Co Stamford Conn p.222, 604

KNIFE SHARPENERS

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
New England Carbide Tool Co Inc 60 Brookline St Cambridge 39 Mass

KNIVES—high speed

E C Atkins & Co 402 S Illinois Indianapolis 9 Ind
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Newman Machine Co Greensboro N C
Oliver Machinery Co Grand Rapids 2 Mich
Taylor-Stiles & Co Riegelsville N J p.488
S A Woods Machine Co Boston 27 Mass

KNIVES—machine

American Knife Co Baldwinsville N Y
E C Atkins & Co 402 S Illinois Indianapolis 9 Ind
Circo Tool Co Milwaukee 3 Wis
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Huther Bros Saw Mfg Co 1290 University Av Rochester N Y p.486
Mitts & Merrill Saginaw Mich
Newman Machine Co Greensboro N C
Oliver Machinery Co Grand Rapids 2 Mich
Simonds Saw & Steel Co Fitchburg Mass
Taylor-Stiles & Co Riegelsville N J p.488
S A Woods Machine Co Boston 27 Mass

KNIVES—putty, linoleum, roofing

Atlas-Ansonia Co North Haven Conn
Bridgeport Hdwe Mfg Corp Bridgeport Conn
Clyde Cutlery Co Clyde O
Glaziers Tool Mfg Co 611 W Adams Chgo Ill
Kler-Vue Knife Rack Co Inc 1776 Broadway New York 19 N Y
Lamson & Goodnow Mfg Co Shelburne Falls Mass
Modern Specialties Co 4140 W Harrison St Chicago 24 Ill (roofing & insulation)
Landers Frary & Clark New Britain Conn
Murray-Black Co Springfield Ohio
Red Devil Tools Irvington 11 N J p.10
Ridgely Trimmer Co Springfield Ohio
Russell Harrington Cutlery Co Southbridge Mass
Sandvik Saw & Tool Corp 47 Warren St NY 7 NY
Tuck Mfg Co Brockton 39 Mass (linoleum only)

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KNIVES—veneer

E C Atkins & Co 402 S Illinois Indianapolis 9 Ind
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa

KNOBS—brass & bronze

Akron Hdwe Mfg Corp 3616 33rd St Long Island City 1 N Y
American Brass Goods Co Grand Rapids 2 Mich
American Cabinet Hdwe Corp Dept 1-AP Rockford Ill (also steel and die-cast) p.227
Barrows Lock Wks 24th & Commonwealth Av North Chicago Ill
The Columbus Brass Mfg Co 620 Dublin Av Columbus 16 Ohio
P & F Corbin New Britain Conn
Erco Mfg Co 2368 N Elston Av Chgo 14 Ill
Fiwale Equipment Mfg Co 165 Church NY 7 NY
Hollymade Hdwe Co 4865 Exposition Blvd Los Angeles 16 Calif
H B Ives Co New Haven 8 Conn
Lawrence Bros Sterling Ill
Lockwood Hdwe Mfg Co Fitchburg Mass p.243
Natl Brass Co Grand Rapids Mich
National Hdwe Co 86-30 103rd Av Wdhvn NY NY
S Parker Hdwe Mfg Corp 27 Ludlow St New York 2 N Y
Peabody-Acker Inc 5816 Hooper Av Los Angeles Calif
Reading Hardware Corp 6th & Willow Reading Pa
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sager Lock Works North Chicago Ill
Sargent & Co PO Box 1940 New Haven 9 Conn
Schlage Lock Co San Francisco 19 Calif
Segal Lock & Hdwe Co Inc 395 Broadway NY 13 NY
Duncan Shaw Corp 33 W 42nd St NY 18 NY
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Standard Bronze Co Bayonne 8 N J p.255
The Stanley Wks New Britain Conn p.253
Technical Glass Co Inc 2050 E 48th Los Angeles 11 Calif
Yale & Towne Mfg Co Stamford Conn p.222, 604

KNOBS—glass

Barrows Lock Wks 24th & Commonwealth Av North Chicago Ill
P &F Corbin New Britain Conn
Hollymade Hdwe Co 4865 Exposition Blvd Los Angeles 16 Calif
Lockwood Hdwe Mfg Co 35 Daniels St Fitchburg Mass p.243
Norwalk Lock Co 395 Broadway NY 13 NY
Overmyer-Erram Glass Co P O Box 2477 Tulsa Okla
S Parker Hdwe Mfg Corp 27 Ludlow NY 2 NY
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sager Lock Works North Chicago Ill
Sargent & Co PO Box 1940 New Haven 9 Conn
Duncan Shaw Corp 33 W 42nd St NY 18 NY
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Technical Glass Co Inc 2050 E 48th St Los Angeles 11 Calif
Yale & Towne Mfg Co Stamford Conn p.222, 604

KNOBS—plastic

Hollymade Hdwe Co 4865 Exposition Blvd Los Angeles 16 Calif
Modern Plastic Co Los Angeles Calif
Natl Brass Co Grand Rapids Mich
National Hardware Co 86-30 103rd Av Wdhvn NY NY
Slaymaker Lock Co Cat 376A Lancaster Pa p.252

KNOBS—wood

R F Cooke Mfg Co Orange Mass
Fiwale Equipment Mfg Co 165 Church St New York 7 N Y
Lockwood Hdwe Mfg Co Fitchburg Mass p.243
Safe Padlock & Hdwe Co Lancaster Pa
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
H A Stiles Co 174 Portland St Boston 14 Mass
Waddell Mfg Co 1117 Taylor Av N W Grand Rapids 2 Mich p.255

LACQUER

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
American Marietta Co 43 E Ohio Chgo 11 Ill
American Varnish Co 1136 N No Branch St Chicago 22 Ill p.205
Berry Bros Inc 211 Leib St Detroit 7 Mich
Breinig Bros Inc Hoboken N J
E I du Pont de Nemours Co Inc Wilmington 98 Del
General Paint Corp 2627 Army St San Francisco 19 Calif
Glidden Co Cleveland O
A C Horn Co 43-42 Tenth Long Island City 1 N Y
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Lowe Bros Co Dayton 2 Ohio p.217
John Lucas & Co Phil Pa
The Martin-Senour Co 2520 S Quarry Chgo 8 Ill
The Mengel Co Inc Louisville 1 Ky p.13, 181
Mobile Paint Mfg Co Mobile 9 Ala
Murphy Paint Div Interchemical Corp 224 McWhorter Newark 1 N J
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
The Patterson Sargent Co 1325 E 38th St Cleveland 14 Ohio
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.209
Pratt & Lambert Inc 75 Tonawanda Buffalo 7 NY
Sherwin-Williams Co Cleveland O
Standard Industrial Products Inc Box 325 Evansville 4 Ind
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
U S Plywood Corp 55 W 44th St NY 18 NY p.13, 181, 220, 257
Valentine & Co Inc 11 E 36th New York 16 N Y
Woodfinishing Products Co 34 Industrial St New York 61 N Y

LADDERS—wood—all types

American Ladder Co 3700 W 38th Chgo Ill
W W Babcock Co Inc Bath N Y
John Berg Mfg Co 5319 S LaSalle Chgo 9 Ill
Breyer Bros Whiting & Co Waupun Wis
J R Clark Co Spring Park Minn
Davenport Ladder Co 2365 McKinley Av Davenport Ia
General Detroit Corp 2272 E Jefferson Av Detroit 7 Mich
The Goshen Mfg Co 10th & Reynolds Sts Goshen Ind
Heider Mfg Co Carroll Ia
Holland Ladder & Mfg Co Holland Mich
Howard Mfg Co Kent Wash
Walter S Kraus Co 43-10 48th Av Woodside N Y
Michigan Ladder Co Ypsilanti Mich
Nappanee Lbr & Mfg Co Nappanee Ind
Newark Ladder & Bracket Co Inc Clark (Rahway) N J
The Patent Scaffolding Co 1550 N Dayton Chicago 22 Ill
Rich Ladder & Mfg Co 3620 Carew Tower Cincinnati 4 Ohio
Rowe Mfg Co Galesburg Ill
Tacoma Lumber Fabricating Co Tacoma 1 Wash
John S Tilley Ladders Co Inc Watervliet NY
Topping Ladder Co Marion N Y
Willamette Valley Lbr Co Dallas Ore
Woodenware Products Corp 122 N 7th St St Louis 1 Mo
Zoss Ladder & Mfg Co Portland 1 Ore

LAMPS & LANTERNS

Bradley & Hubbard Mfg Div Parker Co Meriden Conn
Detjen Corp 303 W 42nd St NY 18 NY
Erco Mfg Co 2368 N Elston Av Chgo 14 Ill
Edwin F Guth Co St Louis 3 Mo
Justrite Mfg Co 2061 N Southport Av Chgo 14 Ill
Mantle Lamp Co of America 223 W Jackson Blvd Chgo Ill
Overmyer-Perram Glass Co P O Box 2477 Tulsa Okla
Sandvik Saw & Tool Corp 47 Warren St NY 7 NY

LATCHES—door

Adams Rite Mfg Co 540 W Chevy Chase Dr Glendale 4 Cal
American Cabinet Hdwe Corp Dept 1-AP Rockford Ill p.227
Barrows Lock Wks 24th & Commonwealth Av North Chicago Ill
Casement Hdwe Co 406 N Wood Chgo Ill
J Chester & Sons 41 Varick Av Brooklyn 6 N Y
Clinton Lock Co Clinton Iowa
P & F Corbin New Britian Conn
Eagle Lock Co Terryville Conn p.232-233
Frantz Mfg Co Sterling Ill p.410
Ideal Brass Works Inc 250 E 5th St St Paul 1 Minn p.248
H B Ives Co New Haven 8 Conn
Lawrence Bros Sterling Ill
Lockwood Hdwe Mfg Co 35 Daniels St Fitchburg Mass p.243
McKinney Mfg Co Pittsburgh Pa p.220
National Brass Co Grand Rapids Mich
National Lock Co Rockford Ill p.237
National Mfg Co Sterling Ill
The Ney Mfg Co 948 High Av S W Canton 4 Ohio (barn)
Penn Hardware Co Reading Pa
Reading Hdwe Corp 6th & Willow Reading Pa
Richards-Wilcox Mfg Co Aurora Ill p.249
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sager Lock Works North Chicago Ill
Schlage Lock Co San Francisco 19 Calif
Segal Lock & Hdwe Co Inc 395 Broadway NY 13 NY
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Standard Bronze Co Bayonne 8 N J p.255
The Stanley Wks New Britain Conn p.253
Technical Glass Co Inc 2050 E 48th St Los Angeles 11 Calif

LATCHES—gate

Barrows Lock Wks 24th & Commonwealth Av North Chicago Ill
Clinton Lock Co Clinton Iowa
P & F Corbin New Britain Conn
Frantz Mfg Co Sterling Ill p.410
Ideal Brass Wks Inc 250 E 5th St St Paul 1 Minn p.248
F D Kees Mfg Co Beatrice Neb
Lockwood Hdwe Mfg Co 35 Daniels St Fitchburg Mass p.243
National Brass Co Grand Rapids Mich
Norwalk Lock Co 395 Broadway NY 13 NY
Reading Hdwe Corp 6th & Willow Reading Pa
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Sharon Hardware Mfg Co Sharon Pa
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Standard Bronze Co Bayonne 8 N J p.255
The Stanley Wks New Britain Conn p.253
Wrightsville Hardware Co Wrightsville Pa

LATH—gypsum

Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
National Gypsum Co Buffalo 2 N Y p.298-299
Schumacher Wall Board Corp South Gate Cal
Sealcon Products Inc Minneapolis 2 Minn
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

LATH—insulating

Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Fir-Tex Porter Bldg Portland 4 Ore
Hawaiian Cane Products Ltd Culver City Calif
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Insulite Div Minnesota & Ontario Paper Co Dept AL-49 500 Baker Arcade Bldg Minneapolis 2 Minn p.285
Johns-Manville Corp Box 290 22 E 40th NY NY p.280, 301, 347, 375
National Gypsum Co Buffalo 2 N Y p.298-299
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

LATH—metal

Alabama Metal Lath Co Birmingham 1 Ala p.449
Allen Steel Products 12911 Hillview Detroit 27 Mich
The Bostwick Steel Lath Co Niles O p.436-437

Number after listing indicates page on which advertisement appears

Ceco Steel Products Corp 5601 W 26th St Chicago 50 Ill p.168-169
Goldsmith Metal Lath Co Cincinnati 32 Ohio
Inland Steel Products Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446-447
Klauer Mfg Co Dubuque Iowa
National Gypsum Co Buffalo 2 N Y p.298-299
Nichols Wire & Aluminum Co Davenport Iowa
Penn Metal Co Inc 205 E 42nd St New York 17 N Y p.442-443
Pittsburgh Steel Products Co 3276 Grant Bldg Pittsburgh 30 Pa (paper-backed wire)
Republic Steel Corp Cleveland 1 Ohio
Sealcon Products Inc Minneapolis 2 Minn
Truscon Steel Co Youngstown 1 O
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293
Wheeling Corrugating Co Wheeling W Va p.441

LATH—wood (See lumber section beginning page 575

LATHES—woodworking

Arcade Mfg Co Freeport Ill
Boice Crane Co 930 W Central Av Toledo 6 Ohio
Delta Mfg Co Milwaukee Wis
Merritt-Monsanto Corp Lockport N Y (veneer)
Oliver Machinery Co Grand Rapids 2 Mich
Pringle & Brodie Machinery Co 566 W Polk St Chgo 7 Ill
J D Wallace & Co 153 S California Av Chgo 12 Ill
Baxter D Whitney & Son Inc Winchendon Mass

LEAD—red

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
Berry Bros Inc 211 Leib St Detroit 7 Mich
Breinig Bros Inc Hoboken N J
The Eagle-Picher Co American Bldg Cincinnati 1 Ohio
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland O
Hammond Lead Products Inc Hammond Ind
National Lead Co 111 Broadway NY NY
Peaslee-Gaulbert Paint & Varnish Co Louisville Ky
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo

LEAD—white

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
The Eagle-Picher Co American Bldg Cincinnati 1 Ohio
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland O
Hoboken White Lead & Color Works 15th & Adams St Hoboken N J
Inland White Lead Co 741 W Gladys Av Chgo Ill
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
National Lead Co 111 Broadway NY NY
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo

LEVEL RODS—surveying

Chicago Steel Tape Co 7956 S Chicago Av Chgo 17 Ill
Eugene Dietzgen Co 2425 N Sheffield Chgo Ill
Keuffel & Esser Co Hoboken N J
L S Starrett Co Athol Mass
Warren-Knight Co 136 N 12th St Philadelphia 7 Pa

LEVELS—carpenter

Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Empire Level Mfg Co Milwaukee Wis
Mayes Bros Tool Mfg Inc Port Austin Mich
Millers Falls Co Greenfield Mass
Ox-Wall Tool Co 928 Broadway New York 10 N Y
Sands Level & Tool Co Clinton Indiana
Peerless Level & Tool Co Sterling Ill
The Stanley Wks New Britain Conn p.253
L S Starrett Co Athol Mass
Warren-Knight Co 136 N 12th St Philadelphia 7 Pa

LEVELS—surveyors

Eugene Dietzgen Co 2425 N Sheffield Chgo Ill
L S Starrett Co Athol Mass
Warren-Knight Co 136 N 12th St Philadelphia 7 Pa

LIFTS—sash

American Cabinet Hdwe Corp Dept 1-AP Rockford Ill p.227
P & F Corbin New Britain Conn
Erco Mfg Co 2368 N Elston Av Chgo 14 Ill
Frantz Mfg Co Sterling Ill p.410
L F Grammes & Sons Inc 396 Union Allentown Pa
McKinney Mfg Co Pittsburgh Pa p.229
National Brass Co Grand Rapids Mich
National Hardware Co 86-30 103rd Av Wdhvn NY NY
National Lock Co Rockford Ill p.237
National Mfg Co Sterling Ill
Norwalk Lock Co 395 Broadway N Y 13 N Y
Penn Hdwe Corp Reading Pa
Reading Hdwe Corp 6th & Willow Reading Pa
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Sargent & Co PO Box 1940 New Haven 9 Conn
Shelby Metal Prods Co Shelby O
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
The Stanley Wks New Britain Conn p.253

LIGHTING—fluorescent

Curtis Lighting Inc 6135 W 65th Chgo 28 Ill
Eagle Electric Mfg Co Inc 23-10 Bridge Plaza So Long Island City 1 N Y
General Electric Co Schenectady 5 N Y
Edwin F Guth Co St Louis 3 Mo
W H Long Co 425 N Clark Chgo Ill
Metalcraft Co 1171 Tremont St Boston 20 Mass
Miami Cabinet Div Philip Carey Mfg Co Middletown Ohio
Sterling-Freeland Industries Inc 4701 N Western Av Chgo 25 Ill p.423
Westinghouse Electric Corp 306 Fourth Av Pittsburgh 30 Pa p.436

LIGHTING FIXTURES

Associated Projects Co Columbus 15 Ohio
Benjamin Electric Mfg Co Des Plaines Ill
Curtis Lighting Inc 6135 W 65th Chgo 38 Ill
Edwin F Guth Co St Louis Mo
Graybar Electric Co Inc Graybar Bldg NY NY
Walter S Kraus Co 43-10 48th Av Woodside N Y
Miller Co Meriden Conn
Pacific Coast Electrical & Supply Co Los Angeles Cal
Pryne & Co Inc Pomona Calif
Westinghouse Electric Corp 306 Fourth Av Pittsburgh 30 Pa p.430

LIGHTING SYSTEMS & EQUIPMENT

Delco Appliance Div Gen'l Motors Sales Corp Rochester N Y
Eagle Electric Mfg Co Inc 23-10 Bridge Plaza So Long Island City 1 N Y
Fairbanks Morse & Co 600 S Michigan Av Chgo Ill
General Electric Co Schenectady 5 N Y
Edwin F Guth Co St Louis 3 Mo
Jacob Wind Elec Co Inc Minneapolis Minn
Kato Engineering Co Mankato Minn
Kohler Co Kohler Wis
Phelps Power & Light Co Rock Island Ill
Pioneer Gen-E-Motor Corporation 5841 W Dickens Chgo 39 Ill
Wincharger Corp Sioux City Ia
Winpower Mfg Co Newton Iowa

LIGHTENING RODS

American Lightning Rod Co Lincoln Neb
Burkett Lightning Rod Co Fremont Ohio
Electra Protection Co Inc 11 N Pearl St Albany 7 N Y p.399
Independent Protection Co Inc Goshen Ind
Mast Lightning Conductor Co Columbus Ohio
Ohio Lightning Rod Co West Milton O
Robbins Lightning Protection Co Maryville Mo
West Dodd Lightning Conductor Corp 1457 W Norwood Chicago Ill

LIME—agricultural

The Carney Co Inc 125 S 5th St Minneapolis Minn
Henry Cowell Lime & Cement Co San Francisco Cal
Gibsonburg Lime Prods Co Gibsonburg O
Kelley Island Lime & Transport Co 1122 Leader Bldg Cleveland 14 Ohio
Louisville Cement Co Inc 315 Guthrie Louisville 2 Ky
Mission Lime Products Corp 841 Ducommun St Los Angeles 12 Cal
National Gypsum Co Buffalo 2 N Y p.298-299
National Lime & Stone Co Findlay O
National Mortar & Supply Co 1520 Grant Bldg Pittsburgh 19 Pa
Ohio Hydrate & Supply Co Woodville O p.448
Riverton Lime & Stone Co Inc Riverton Va
Standard Lime & Stone Co Baltimore Md
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293
Washington Brick & Lime Co Box 2198 Spokane 8 Wash
Woodville Lime Prods Co Toledo O

LIME—finishing

Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
Henry Cowell Lime & Cement Co 2 Market San Francisco 11 Cal
Fairmont Wall Plaster Co Fairmont W Va
Gibsonburg Lime Prods Co Gibsonburg O
Kelley Island Lime & Transport Co 1122 Leader Bldg Cleveland 14 Ohio
Marblehead Lime Co 59 E Madison St Chicago 2 Ill
Mission Lime Prods Corp 841 Ducommun St Los Angeles 12 Calif
National Gypsum Co Buffalo 2 N Y p.298-299
National Lime & Stone Co Findlay O
National Mortar & Supply Co 1520 Grant Bldg Pittsburgh 19 Pa
Ohio Hydrate & Supply Co Woodville O p.448
United States Gypsum Co 300 W Adams Chgo 6 Ill p.293
Washington Brick & Lime Co Box 2198 Spokane 8 Wash
Woodville Lime Prods Co Toledo O

LIME—masons hydrated

The Carney Co Inc 125 S 5th St Minneapolis Minn
Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
Chicago Fire Brick Co 1461 N Elston Chgo 22 Ill
Gibsonburg Lime Prods Co Gibsonburg O
Kelley Island Lime & Transport Co 1122 Leader Bldg Cleveland 14 Ohio
Louisville Cement Co Inc 315 Guthrie Louisville 2 Ky
Marblehead Lime Co 59 E Madison St Chgo 2 Ill
Mission Lime Products Corp 841 Ducommun St Los Angeles 12 Cal
National Gypsum Co Buffalo 2 N Y p.298-299
National Lime & Stone Co Findlay O
National Mortar & Supply Co 1520 Grant Bldg Pittsburgh 19 Pa
Ohio Hydrate & Supply Co Woodville O p.448
Riverton Lime & Stone Co Inc Riverton Va
United States Gypsum Co 300 W Adams Chgo 6 Ill p.293
Washington Brick & Lime Co Box 2198 Spokane 8 Wash
Woodville Lime Products Co Toledo O

LIME—pebble

Kelley Island Lime & Transport Co 1122 Leader Bldg Cleveland 14 Ohio
Louisville Cement Co Inc 315 Guthrie Louisville 2 Ky
Marblehead Lime Co 59 E Madison St Chicago 2 Ill
Mission Lime Products Corp 841 Ducommun St Los Angeles 12 Calif
National Gypsum Co Buffalo 2 N Y p.298-299
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

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LINING POLES—surveying

Chicago Steel Tape Co 7956 S Chicago Av Chgo 17 Ill
Eugene Dietzgen Co 2425 N Sheffield Av Chgo Ill
Kueffel & Esser Hoboken N J
Frederick Post Co 155 E Ohio Chgo Ill

LINOLEUM

Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Congoleum-Nairn Inc Kearny N J
Paraffine Companies Inc 475 Brannan St San Francisco 19 Calif

LINOLEUM BINDING

Copco Steel & Engineering Co 14035 Grand River Av Detroit 27 Mich
Logan Co Inc Louisville 6 Ky
Metal Crafters Div Castone Products Co Cedar Rapids Ia p.110
Samson Products Co 3219 Armitage Av Chicago 47 Ill
Wooster Products Inc Wooster Ohio

LINTELS—steel

Adams Co Dubuque Ia
Decatur Iron & Steel Co Decatur Ala
The Donley Bros Co 1392S Miles Av Cleveland 5 Ohio p.111-134
Logan Co Inc Louisville 6 Ky.
Metal Crafters Div Castone Products Co Cedar Rapids Ia p.110
Republic Steel Corp Berger Mfg Div Canton 5 Ohio
Superior Fireplace Co 1709-D East 15th St Los Angeles 21 Cal and 601-X No Point Road Baltimore 6 Md p.385
Truscon Steel Co Youngstown 1 O
Vento Steel Products Co Inc 249 Colorado Av Buffalo 15 N Y p.196

LOCKERS

All-Steel Equipment Co Aurora Ill
Curtis Cos Inc Clinton Ia
Lyon Metal Prod Inc Aurora Ill
Republic Steel Corp Cleveland 1 Ohio
F P Smith Wire & Iron Works Inc 2346 N Clybourn Av Chicago 14 Ill
Universal Steel Equipment Corp 135 W 23rd NY NY

LOCKS—door

Adams Rite Mfg Co 540 W Chevy Chase Dr Glendale 4 Cal
Allied Hardware Corp 328 Grand Av Brooklyn 5 N Y
Barrows Lock Wks 24th & Commonwealth Av North Chicago Ill
Bemis & Call Co Springfield Mass
Best Universal Lock Co Inc 10 N Senate Indianapolis 4 Ind p.255
J Chesler & Sons Co 41 Varick Av Brooklyn N Y
Clinton Lock Co Clinton Iowa
P & F Corbin New Britain Conn
Eagle Lock Co Terryville Conn p.232-233
Lockwood Hdwe Mfg Co 35 Daniels St Fitchburg Mass p.243
Norwalk Lock Co 395 Broadway NY 13 NY
Peabody-Acker Inc 5816 Hooper Av Los Angeles Calif (sliding door)
Penn Hdwe Co Reading Pa
Reading Hdwe Co 6th & Willow Reading Pa
Russell & Erwin Div The American Hdw Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sager Lock Works North Chicago Ill
Sargent & Co PO Box 1940 New Haven 9 Conn.
Schlage Lock Co San Francisco 19 Cal
Segal Lock & Hdwe Co Inc 395 Broadway NY 13 NY
Duncan Shaw Corp 33 W 42nd St New York 18 N Y
Slaymaker Lock Co Dept 376A Lancaster Pa p.252
Sun Metal Products 221 N La Salle St Chicago Ill
Technical Glass Co Inc 2050 E 48th St Los Angeles 11 Cal

LOCKS—sash

American Cabinet Hdwe Corp Dept 1-AP Rockford Ill p.227
Barrows Lock Wks 24th & Commonwealth Av North Chgo Ill
Clinton Lock Co Clinton Iowa
P & F Corbin New Britain Conn
Erco Mfg Co 2368 N Elston Chgo 14 Ill
Frantz Mfg Co Sterling Ill p.410
H B Ives Co New Haven Conn
King-Chippewa Co 2517 California Av St Louis 4 Mo
Latch Lock Mfg Co St Paul 4 Minn (storm & screen)
Lockwood Hdwe Mfg Co 35 Daniels St Fitchburg Mass p.243
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157-262
McKinney Mfg Co Pittsburgh Pa p.229
National Brass Co Grand Rapids Mich
National Hardware Co 86-30 103rd Av Wdhvn NY NY
National Lock Co Rockford Ill p.237
National Mfg Co Sterling Ill
Norwalk Lock Co 395 Broadway NY 13 NY
Penn Hdwe Co Reading Pa
Reading Hdwe Corp 6th & Willow Reading Pa
Russell & Erwin Div The American Hdw Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sager Lock Works North Chicago Ill
Sargent & Co PO Box 1940 New Haven 9 Conn
Duncan Shaw Corp 33 W 42nd St New York 18 N Y
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Technical Glass Co Inc 2050 E 48th St Los Angeles 11 Calif

LOCKS—tubular

Barrows Lock Wks 24th & Commonwealth Av North Chicago Ill
Best Universal Lock Co Inc 10 N Senate Indianapolis 4 Ind p.255
J Chesler & Sons 41 Varick Av Brooklyn N Y
Clinton Lock Co Clinton Iowa
P & F Corbin New Britain Conn
Lockwood Hardware Mfg Co 35 Daniels St Fitchburg Mass p.243
National Brass Co Grand Rapids Mich
National Hardware Co 86-30 103rd Av Wdhvn NY NY
Penn Hdwe Co Reading Pa
Reading Hdwe Corp 6th & Willow Reading Pa
Russell & Erwin Div The American Hdw Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sager Lock Works North Chicago Ill
Sargent & Co PO Box 1940 New Haven 9 Conn
Duncan Shaw Corp 33 W 42nd St New York 18 N Y
Technical Glass Co Inc 2050 E 48th St Los Angeles 11 Calif

LOG CABIN SIDING

(See lumber section beginning 575)

LOG LOADERS

American Hoist & Derrick Co St Paul 1 Minn
American Mfg Co Inc Tacoma 2 Wash
Clyde Iron Works Inc Duluth 1 Minn
Cunningham Mchy Co 735 Ricou St Shreveport La p.487
Drott Mfg Corp Milwaukee 9 Wis
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
Hesse-Ersted Iron Works Portland Ore
Hyster Co Portland 8 Ore & Peoria 1 Ill
Taylor Machine Works Louisville Miss (combination loader & skidder)
Washington Iron Works Seattle 4 Wash

LOG SKIDDERS

Clyde Iron Works Inc Duluth 1 Minn
Dorsey Trailers Elba Ala
Drott Mfg Corp Milwaukee 9 Wis
Lindsey Wagon Co Laurel Miss (Two wheels self-loading)
Taylor Machine Works Louisville Miss (combination loader & skidder)
Washington Iron Works Seattle 4 Wash

LOG TURNERS

American Mfg Co Inc 2119 Pacific Av Tacoma 2 Wash
Corinth Machinery Co Corinth Miss
Corley Mfg Co Chattanooga 1 Tenn
Cunningham Mchy Co 735 Ricou St Shreveport La p.487
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
Lane Mfg Co Montpelier Vermont
Soule Steam Feed Wks Meridian Miss

LOGGING ARCHES—sulkies

Hyster Co Portland 8 Ore & Peoria 1 Ill
Washington Iron Works Seattle 4 Wash

LOGS—structural for cabin & interior paneling

Fence Co of America 608 S Dearborn St Chicago 5 Ill
Mac Gillis & Gibbs Co 324 E Wisconsin Av Milwaukee 2 Wis (interior log paneling)

LOUVERS—attic ventilating

Allen Steel Products 12911 Hillview Detroit 27 Mich
Carr Adams & Collier Co Dubuque Ia p.147
Clay Equipment Corp Cedar Falls Iowa
Curtis Cos Inc Clinton Ia
The Donley Bros Co 1392S Miles Av Cleveland 5 Ohio p.111-134
Edwards Mfg Co 427 Culvert St Cincinnati 2 Ohio
Fordyce Lumber Co Fordyce Ark p.313
Gregg & Son Nashua N H p.158-159
Ideal Co Waco Texas
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Inland Steel Products Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446-447
Klauer Mfg Co Dubuque Iowa
Krauser-Boyd Inc N Tonawanda N Y
Leslie Welding Co 2940 W Carroll Chgo 12 Ill p.391
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
Nichols Wire & Aluminum Co Davenport Ia
Peerless Electric Co Warren Ohio
Roach-Musser Co Muscatine Ia p.191
Shepler Mfg Co 1312 Sheffield St Pittsburgh 12 Pa
U S Gypsum Co 300 W Adams St Chicago 6 Ill p.293

LUMBER BUGGIES

Bassett Industries Dept AL Vinton Iowa p.490
Corley Mfg Co Chattanooga 1 Tenn
Electric Wheel Co Quincy Ill
Nutting Truck & Caster Co 2201 Division St Faribault Minn

LUMBER CARRIERS

Gerlinger Carrier Co P O Box 338 Dallas Ore p.486
Hyster Co Portland 8 Ore & Peoria 1 Ill
Pointer-Willamette Co Portland 5 Ore
Ross Carrier Co Benton Harbor Mich p.470
Standard Forge & Axle Co Inc Montgomery 2 Ala
Wentworth & Irwin Inc 123 N E Oregon St Portland 14 Ore

LUMBER LIFTS

American Mfg Co Inc 2119 Pacific Av Tacoma 2 Wash
Gerlinger Carrier Co P O Box 338 Dallas Ore p.486
Hyster Co Portland 8 Ore & Peoria 1 Ill
Joyce-Cridland Co Dayton 3 Ohio
Leitelt Iron Wks Grand Rapids 2 Mich (screw type)
Rotary Lift Co 1051 Kentucky St Memphis 2 Tenn

LUMBER PILERS

American Mfg Co Inc 2119 Pacific Av Tacoma 2 Wash
Bradney Machine Co Inc Middletown N Y
Johnson Mfg Co Inc Holly St & Duwamish River Seattle Wash
Leavenworth Mfg Co Leavenworth Wash
Stemm Bros Inc Leavenworth Wash

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LUMBER TREATING

American Creosoting Co Inc Louisville Ky
American Lumber & Treating Co 332 S Michigan Av Chgo Ill p.47
Atlantic Creosoting Co Inc 17 Battery Pl N Y N Y
Crosby Lbr & Mfg Co Crosby Miss
Fordyce Lumber Co Fordyce Ark p.313
Frost Lumber Industries Inc Shreveport 90 La
Gulf States Creosoting Co Hattiesburg Miss
Gulfport Creosoting Co Gulfport Miss
Idaho Pole Co Sandpoint Idaho
Indiana Wood Preserving Co Terre Haute Ind
International Creosoting & Construction Co Galveston Tex
Keystone Wood Preserving Co Philadelphia Pa
Koppers Company Inc Wood Preserving Div Pittsburgh 19 Pa
The Long-Bell Lumber Co R A Long Bldg Kansas City 6 Mo & Longview Wash
T R Miller Mill Co Inc Brewton Ala
National Pole & Treating Div Minnesota & Ontario Paper Co 500 Arcade Bldg Minneapolis 2 Minn
Pope & Talbot Inc Lbr Div Portland Ore
Protexol Corp 105 Market St Kenilworth 4 N J p.85
Reilly Tar & Chemical Corp 1615 Merchants Bank Bldg Indianapolis 4 Ind
Republic Creosoting Co Merchants Bank Bldg Indianapolis 4 Ind
Southwestern Creosoting Co Muskogee Okla
Taylor-Colquitt Co Spartanburg S C
Texas Creosoting Co Orange Tex p.74
West Coast Wood Preserving Co 1118 4th Av Seattle Wash
Willamette Valley Lbr Co Dallas Ore

MACHINERY—box & crate

Beach Mfg Co Montrose Pa
Chase Turbine Mfg Co Orange Mass
Chattanooga Mchy Co 1000 Watkins St Chattanooga 4 Tenn
Mitts & Merrill Saginaw Mich
Saranac Machine Co Benton Harbor Mich
Baxter D Whitney & Son Inc Winchendon Mass
S A Woods Machine Co Boston 27 Mass
Yates American Machine Co Beloit Wis

MACHINERY—excelsior making

Crescent Excelsior Machinery Co Indianapolis Ind
Indianapolis Excelsior Machinery Co Indianapolis Ind
Lewis T Kline Co Alpena Mich
Mitts & Merrill Saginaw Mich

MACHINERY—logging

Allis-Chalmers Mfg Co Milwaukee 1 Wis p.484
American Mfg Co Inc Tacoma 2 Wash
Pointer-Willamette Co Portland 5 Ore
T Southworth Tractor & Mchy Co Inc Albany N Y
Taylor Machine Works Louisville Miss
Washington Iron Works Seattle 4 Wash

MACHINERY—planing mill

American Saw Mill Machinery Co Hackettstown N J
Beach Mfg Co Montrose Pa
Boice Crane Co 930 W Central Av Toledo 6 Ohio
Buss Machine Wks Holland Mich
J A Fay & Egan Co 2022 Eastern Av Cincinnati 22 Ohio
Mattison Mach Wks Rockford Ill
McDonough Mfg Co Eau Claire Wis
Mitts & Merrill Saginaw Mich
Newman Machine Co Greensboro N C
Stetson-Ross Mach Co Seattle 4 Wash
The R J Tower Iron Wks Greenville Mich
Turner Machinery Co 500 Beale St San Francisco 5 Cal p.473-474
Vonnegut Moulder Corp Indianapolis Ind
Baxter D Whitney & Son Inc Winchendon Mass
S A Woods Machine Co Boston 27 Mass
Yates-American Mach Co Beloit Wis

MACHINERY—sawmill

Allis-Chalmers Mfg Co Milwaukee Wis p.484
American Mfg Co Inc 2119 Pacific Av Tacoma 2 Wash
American Saw Mill Machinery Co Hackettstown N J
Chase Turbine Mfg Co Orange Mass
Corley Mfg Co Chattanooga Tenn
Corinth Machinery Co Corinth Miss
Cunningham Mchy Co 735 Ricou St Shreveport La p.487
Enterprise Co Columbiana Ohio
J A Fay & Egan Co 2022 Eastern Av Cincinnati 22 Ohio
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
R R Howell Co Minneapolis 14 Minn
Jeffrey Mfg Co 827-99 N 4th St Columbus 16 Ohio
Lane Mfg Co Montpelier Vt
Mitts & Merrill Saginaw Mich
Montgomery Ward Dept AL-49 Chicago Ill p.489
D J Murray Mfg Co Wausau Wis
Prescott Co Menominee Mich
The R J Tower Iron Works Greenville Mich
Turner Machinery Co 500 Beale St San Francisco 5 Cal p.473-474
Turner Mfg Co Statesville N C
Wheland Co Chattanooga 2 Tenn
Wickes Bros Saginaw Mich
S A Woods Machine Co Boston 27 Mass

MACHINERY—sawmill, portable

American Saw Mill Mchy Co Hackettstown N J
Chase Turbine Mfg Co Orange Mass
Corinth Machinery Co Corinth Miss
Corley Mfg Co Chattanooga 1 Tenn
Cunningham Machinery Co 735 Ricou St Shreveport La p.487
Enterprise Co Columbiana Ohio
A B Farquhar Co York Pa
Frick Co Dept 75 Waynesboro Pa p.491
Kent Machine Co 115 Portage Trail Cuyahoga Falls O
Lane Mfg Co Montpelier Vt
Mall Tool Co 7733 S Chicago Av Chgo 19 Ill
Montgomery Ward Dept AL-49 Chicago Ill p.489
The R J Tower Iron Wks Greenville Mich
Wheland Co Chattanooga 2 Tenn

MACHINERY—shingle

Lane Mfg Co Montpelier Vt
Prescott Co Menominee Mich

MACHINERY—veneer & plywood

American Mfg Co Inc 2119 Pacific Av Tacoma 2 Wash
Beach Mfg Co Montrose Pa
Black Bros Co Inc Mendota Ill
Chattanooga Machinery Co 1000 Watkins St Chattanooga 4 Tenn
Hydraulic Press Mfg Co Mt Gilead O
Merritt-Monsanto Corp Lockport N Y
Mitts & Merrill Saginaw Mich
Oliver Machinery Co Grand Rapids 2 Mich
Yates-American Machine Co Beloit Wis

MACHINERY—wood flour

Allis-Chalmers Mfg Co Milwaukee 1 Wis p.484
Bauer Bros Co Springfield Ohio
Pulverizing Machinery Co Summit N J
Williams Patent Crusher & Pulverizer Co St Louis Mo

MACHINERY—woodworking

American Saw Mill Mchy Co Hackettstown N J
Beach Mfg Co Montrose Pa
Nels J Billstrom Inc 1884 18th Av Rockford Ill
Boice Crane Co 930 W Central Ave Toledo 6 Ohio
Buss Machine Wks Holland Mich
C H & E Mfg Co 3349 N Palmer St Milwaukee 12 Wis
Chattanooga Mchy Co 1000 Watkins St Chattanooga 4 Tenn
C K L Machinery Co 160 Harrison Oshkosh Wis
Circo Tool Co Milwaukee 3 Wis
Consolidated Machinery & Supply Co Ltd 2029 Santa Fe Av Los Angeles 21 Calif
Defiance Mach Wks Defiance O
Delta Mfg Co Milwaukee 1 Wis
Ekstrom Carlson & Co Rockford Ill
J A Fay & Egan Co 2022 Eastern Av Cincinnati 22 Ohio
Greenlee Bros & Co 12th & Columbia Av Rockford Ill
Heston & Anderson Div St Paul Fdry & Mfg Co 606 W Kirkwood St Fairfield Ia
Lane Mfg Co Montpelier Vt
Mattison Machine Works Rockford Ill
McDonough Mfg Co Eau Claire Wis
Mitts & Merrill Saginaw Mich
Muskegon Machine Co Newburgh N Y
Newman Machine Co Greensboro N C
Oliver Machinery Co Grand Rapids 2 Mich
Onsrud Mach Wks Inc 3910 W Palmer Chgo Ill
Parks Woodworking Mach Co Cincinnati O
Porter-Cable Machine Co 1600-4 N Salina St Syracuse 8 N Y
Pringle & Brodie Machinery Co 566 W Polk Chgo 7 Ill
Red Star Products Div Delta Mfg Co 600 E Vienna Milwaukee 1 Wis
Stetson-Ross Mach Co Seattle Wash
Turner Machinery Co 500 Beale St San Francisco 5 Cal p.473-474
Vonnegut Moulder Corp Indianapolis 2 Ind
Walker Turner Co East Plainfield N J
J D Wallace & Co 153 S California Av Chicago 12 Ill
Baxter D Whitney & Son Inc Winchendon Mass
S A Woods Machine Co Boston 27 Mass
Yates-American Mach Co Beloit Wis

MACHINES—floor waxing & polishing

Atlas Floor Surfacing Mach Corp 248 E 34th NY 16 NY
Clarke Sanding Machine Co Muskegon Mich
Fay Floor Mach Co 279 Fifth Av NY NY
Finnell System Inc Elkhart Ind
Gen'l Floorcraft Inc 333 Sixth Av NY NY
Hild Floor Machine Co 1313 W Randolph St Chicago 7 Ill
Hilger Co St Cloud Minn
Holt Mfg Co 651 20th St Oakland 12 Calif
Landers Frary & Clark New Britain Conn
Lincoln-Schlueter Floor Mchy Co 512 S Peoria Chicago Ill
Red Devil Tools Irvington 11 N J p.10

MACHINES—unit lumber piling

American Mfg Co Inc Tacoma 2 Wash
Hyster Co Portland 8 Oregon & Peoria 1 Ill
Ross Carrier Co Benton Harbor Mich p.470

MAIL BOXES— built-in, residence & apartment

Air Control Products Inc Coopersville Mich
Allen Steel Products 12911 Hillview Detroit 27 Mich
American Device Mfg Co Red Bud Ill (residence only)
R G Coffman Co Inc 2809 N Orange Av Orlando Fla
Columbia Metal Box Co 260 E 143rd St NY 51 NY
P & F Corbin Park St New Britain Conn
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Mail Safe Mfg Co St Paul 4 Minn
Metal Prod Corp West Haven Conn
McKinney Mfg Co Pittsburgh Pa p.229
Northwestern Products Co St Louis 3 Mo
Penn-Greg Mfg Co 2608 Bloomington Av Minneapolis 7 Minn p.135
Slaymaker Lock Co Dept 376A Lancaster Pa p.252
Standard Bronze Co Bayonne 8 N J p.255

MANTELS—wood

The Brecher Co Louisville Ky
Cole Mfg Co P O Box 2657 Memphis 2 Tenn p.192
Columbia Mantel Co Inc 345 S 9th St Louisville 3 Ky
Curtis Cos Inc Clinton Ia
Ideal Co Box 889 Waco Tex
Marquart Millwork Co Oshkosh Wis p.148
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
The Radford Co Oshkosh Wis
The Readybuilt Products Co 1705-23 McHenry Baltimore 23 Md
Rock Island Sash & Door Works Rock Island Ill
Frank C Snedaker & Co Inc Philadelphia 40 Pa

MASONS' SUPPLIES

Graystone Concrete Products Co 134 Nickerson St Seattle 9 Wash
Huther Bros Saw Mfg Co Inc 1290 University Av Rochester N Y p.486
M & M Wire Clamp Co Minneapolis Minn

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Fayette R Plumb Inc Philadelphia 37 Pa
Raucher Mfg Co Inc Norwich Conn
Stanley Tools New Britain Conn p.253
United States Gypsum Co 300 W Adams Chgo 6 Ill p.293
Vaughan & Bushnell Mfg Co 135 S LaSalle Chgo Ill

MESH—wire

Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Colorado Fuel & Iron Corp Denver 1 Colo
Columbia Steel Co Russ Bldg San Francisco 6 Cal
Keystone Steel & Wire Co Peoria Ill p.397
Logan Co Inc Louisville 6 Ky
Nichols Wire & Aluminum Co Davenport Ia
Northwestern Steel & Wire Co Sterling Ill
Pittsburgh Steel Co Pittsburgh 30 Pa
Republic Steel Corp Cleveland 1 Ohio
F P Smith Wire & Iron Works Inc 2346 N Clybourn Av Chicago 14 Ill
Southern Wire & Iron Wks 441 Memorial Dr S E Atlanta Ga
Tennessee Coal Iron & RR Co U S Steel Corp Sub Birmingham 2 Ala p.392
Truscon Steel Co Youngstown 1 Ohio

METERS—feed water

The Bristol Co Waterbury 91 Conn
Neptune Meter Co 50 W 50th New York 20 N Y
Republic Flow Meters Co 2240 W Diversey Chgo Ill
Taylor Instrument Co Rochester 1 N Y

METERS—steam

American Meter Co 60 E 42nd NY NY
The Bristol Co Waterbury 91 Conn
Brown Instrument Co 4419 Wayne Av Philadelphia 44 Pa
Republic Flow Meters Co 2240 W Diversey Chgo Ill
Taylor Instrument Co Rochester 1 N Y

MICROMETERS

Brown & Sharpe Mfg Co 235 Promenade St Providence 1 R I
The Lufkin Rule Co Saginaw Mich
Millers Falls Co Greenfield Mass

MILLING IN TRANSIT

Bradley Miller & Co Bay City Mich
Corinth Planing Mill Co Corinth Miss p.80
Foshee Lumber Co Montgomery Ala
Grayson Lbr Co Birmingham Ala
Hallack & Howard Lumber Co Denver 1 Colo
Jas E Stark Co Memphis Tenn
Tacoma Lumber Fabricating Co Tacoma 1 Wash
Wallrich's Shawano Wis
Washington Mfg Co PO Box 1544 Tacoma 1 Wash

MIRRORS—bathroom, kitchen

Acme Specialty Mfg Co Toledo O
Semon Bache & Co 626 Greenwich NY 14 NY
Belknap Glass Co Seattle 1 Wash
Conant Bros Co 34 Portland Boston 14 Mass
Conroy-Prugh Glass Co Pittsburgh Pa
Dearborn Glass Co Dept RB 2402 W 21st St Chicago 8 Ill p.427
Excel Metal Cabinet Co Jamestown NY
Libbey-Owens-Ford Glass Co Toledo O p.269-272
Miami Cabinet Div Philip Carey Mfg Co Middletown O
National Mirror Works Rockford Ill
The Nurre Cos Inc Bloomington Ind
Chas Parker Co Meriden Conn
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.267
Safetee Glass Co Philadelphia 44 Pa
E C Smith Mfg Corp 1515 N Artesian Chgo 22 Ill
Standard Mirror Co 141 Milton Buffalo 10 NY
Toledo Plate & Window Glass Co 1041 Utica St Toledo 2 Ohio

MIRRORS—decorative

Art Mirror & Glass Specialty Co 4401 W Carroll Chicago Ill
Semon Bache & Co 636 Greenwich NY 14 NY
Belknap Glass Co Seattle 1 Wash
Century Mirror Corp 1521 W 35th Chgo Ill
Dearborn Glass Co Dept RB 2402 W 21st Chicago 8 Ill p.427
W P Fuller & Co 301 Mission San Francisco 19 Cal
Libbey-Owens-Ford Glass Co Toledo O p.269-272
Miami Cabinet Div Philip Carey Mfg Co Middletown Ohio
Nat'l Mirror Wks Rockford Ill
The Nurre Cos Inc Bloomington Ind
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.267
Safetee Glass Co Philadelphia 44 Pa
Standard Mirror Co 141 Milton Buffalo 10 NY
Toledo Plate & Window Glass Co 1041 Utica Toledo 2 Ohio
Warren Co Atlanta Ga

MITER BOXES

American Crayon Co Sandusky Ohio (lock cornered)
McGrath-St Paul Co 242 E Fifth St St Paul 1 Minn
Millers Falls Co Greenfield Mass
The Stanley Wks New Britain Conn p.253

MIXERS—concrete, mortar, etc.

Barber-Greene Co Aurora Ill (bituminous)
Besser Mfg Co Alpena Mich
Chain Belt Co 1756 W Bruce St Milwaukee 4 Wis
Construction Machinery Co Waterloo Iowa
Jaeger Mach Co Columbus O
Kent Machine Co 115 Portage Trail Cuyahoga Falls Ohio
Koehring Co 3026 W Concordia Av Milwaukee 10 Wis
Lansing Co Lansing Mich
Multiplex Concrete Machinery Co Elmore Ohio
Ransome Machinery Co Sub of Worthington Pump & Machinery Corp Dunnellen N J
Red Devil Tools Irvington 11 N J p.10
T L Smith Co Milwaukee Wis
Stearns Mfg Co Inc Adrian Mich

MODEL HOUSES—miniature

American Lumberman & Building Products Merchandiser 139 N Clark St Chicago 2 Ill (model house kits)
Build-A-Plan Inc 1150 Broadway N Y 1 N Y p.500
Curtis Cos Inc Clinton Ia (kitchens)
Home Planners Inc 11711 E 8 Mi Rd East Detroit 26 Mich
The Homes Center 720 Washington Av SE Minneapolis Minn
National Plan Service Inc 1315 W Congress Chgo 7 Ill

MOISTURE INDICATORS

American Instrument Co 8015 Georgia Av Silver Spring Md
L R Bradley & Co 25 W 45th St New York 19 N Y p.484
Colloid Equipment Co Inc 50 Church St New York 7 N Y
Kaydel Moisture Gauges Suite 207-9 126 Liberty St New York 6 N Y p.491
Measurements Corp Boonton N J
Moisture Register Co Dept A 133 N Garfield Alhambra Calif p.488
The National Engineering Co 5777 N Hillside Av Indianapolis 20 Ind p.490
C J Tagliabue (NJ) 614 Frelinghuysen Av Newark 5 N J
Taylor Instrument Companies Rochester 1 N Y

MOPS—dust & polish

Algoma Mfg Co Algoma Wis
American Standard Mfg Co 2509 S Green Chgo 8 Ill
Dustmaster Corp Minneapolis Minn
J I Holcomb Mfg Co Indianapolis 7 Ind
Howard Dustless Duster Co Boston 10 Mass
Illinois Duster & Brush Co 1926 Webster Av Chgo 14 Ill
Lasting Mop & Broom Co Evansville Ind
O-Cedar Corp 2246 W 49th Chgo 9 Ill
The Pioneer Mfg Co Cleveland 4 Ohio
Rubon Woodfinishing & Products Co 500 W 7th St Kansas City 6 Mo
L M Thronton Mfg Co 2825 E 18th Kansas City Mo
Tu-Way Prod Co Detroit Mich
Wm D Whitaker Philadelphia 24 Pa

MOPS—roofing applicator

Kirby Industries 1508 E Las Tunas San Gabriel Calif p.354

MORTAR—masonry

The Carney Co Inc 125 S 5th St Minneapolis Minn
Huron Portland Cement Co Detroit 26 Mich
Louisville Cement Co Inc 315 Guthrie Louisville 2 Ky
Nat'l Lime & Stone Co Findlay O
National Mortar & Supply Co Pittsburgh Pa
Ohio Hydrate & Supply Co Woodville O p.448
Riverton Lime & Stone Co Inc Riverton Va
U S Gypsum Co 300 W Adams St Chicago 6 Ill p.293

MORTAR MIX

Adel Clay Prod Co Des Moines Ia
Laclede-Christy Clay Prod Co St Louis Mo
Lehigh Sewer Pipe & Tile Co Ft Dodge Ia
Ohio Hydrate & Supply Co Woodville O p.448
Riverton Lime & Stone Co Inc Riverton Va
Sheffield Brick & Tile Co Sheffield Ia
Washington Brick & Lime Co Spokane 8 Wash
What Cheer Clay Products Co What Cheer Iowa

MOTORS—electric

Allis-Chalmers Mfg Co Milwaukee Wis p.484
Century Electric Co 1806 Pine St St Louis 3 Mo
Delco Appliance Div Gen Motor Sales Corp Rochester N Y
Diehl Mfg Co 1124 Finderne Av Somerville N J
Emerson Elec Mfg Co 8100 Florissant Av St Louis 21 Mo
Fairbanks Morse & Co 600 S Michigan Av Chicago Ill
Fasco Industries Inc Rochester 2 N Y
General Electric Co Schenectady N Y
Hamilton Beach Co Div Scoville Mfg Co Racine Wis
Kato Engineering Co Mankato Minn
Kingston-Conley Elec Co North Plainfield N J
Leland Elec Co Dayton O
Peerless Elec Co Warren Ohio
Reynolds Electric Co 2650 W Congress Chgo 12 Ill
Robbins & Myers Co Springfield O
Russell Elec Co 378 W Huron Chgo Ill
Signal Elec Mfg Co Menominee Mich
F A Smith Mfg Co Inc Rochester 2 N Y
Wagner Electric Corp St Louis 14 Mo
Westinghouse Electric Corp 306 Fourth Av Pittsburgh 30 Pa p.430

MOULDINGS—metal

Aetna Steel Products Corp 61 Broadway N Y 6 N Y p.179
Aluminum Co of America 1723 Gulf Bldg Pittsburgh 19 Pa p.339
American Metal Moulding Co Inc 227 E 144th St NY 51 NY
Ames Metal Moulding Co Inc 227 E 144th St New York 51 N Y
Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
B & T Metals Co Columbus 16 O p.97-100
J G Braun Co 615 S Paulina St Chicago 12 Ill
Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Chicago Metallic Sash Co 2112 Ogden Av Chicago 12 Ill
Ford Metal Moulding Co 329 E 45th NY NY
Gibbs Boardtile Corp 636D N Aberdeen Chgo Ill
Herron-Zimmers Moulding Co Detroit Mich
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Inland Steel Products Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446-447
The Kawneer Co Niles Mich
Kinkead Industries Inc 450 W Superior Chgo 10 Ill

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Knapp Bros Mfg Co Joliet Ill
John Lees Div Serrick Corp Muncie Ind
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157, 262
Marsh Wall Prod Inc 441 Main St Dover O p.283
The Mengel Co Inc Louisville 1 Ky p.13, 181
Metal Trims Inc Box 1072 Youngstown 2 Ohio
Mouldings Inc Indianapolis 2 Ind
Penn Supply & Metal Corp Philadelphia 22 Pa
Prestile Mfg Co 2860 Lincoln Av Chgo 13 Ill p.300
Protex Weatherstrip Mfg Co 4500 S Western Chgo Ill
Pyramid Metals Co 1335 N Wells Chgo 10 Ill
Reynolds Metals Co Bldg Products Div 2002 S 9th St Louisville 1 Ky p.93
S & W Moulding Co 980 Parsons Av Columbus 6 Ohio
Samson Products Co 3219 Armitage Av Chicago 47 Ill
Standard Moulding Co Inc 33 W 42nd St New York 18 N Y
Superior Wall Products Co 4413 N American St Philadelphia 40 Pa p.300
Trimedge Inc Youngstown Ohio
Tylac Co Monticello Ill
United Industries Inc 231 S LaSalle Chgo Ill
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
U S Plywood Corp 55 W 44th St NY 18 NY p.13-181
R D Werner Co Inc 285 Fifth Av New York 16 N Y p.108-109
Wooster Products Inc Wooster Ohio
Youngstown Manufacturing Inc Dept 1 66 S Prospect Youngstown 6 Ohio

MOULDINGS—plastic

Herron-Zimmers Moulding Co Detroit Mich
Imperial Molded Products Corp 2925 Harrison St Chicago 12 Ill
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157,262
Marsh Wall Prod Inc 441 Main St Dover O p.283
Presstite Engineering Co St Louis 10 Mo
Superior Plastics Div Commonwealth Plastics Inc 426 N Oakley Blvd Chicago 12 Ill

MOULDINGS—wood

Arkansas Oak Flooring Co Pine Bluff Ark
Bendix Mfg Co 192 Lexington Av New York 16 N Y
Biles-Coleman Lbr Co Inc Omak Wash p.194
Bradley Lumber Co of Arkansas Warren Ark p.48
Burke Millwork Co Inc 3201 Fremont Av Seattle 3 Wash
Chicago Wood & Plastic Products 4201 W Irving Park Chgo 41 Ill
Cole Mfg Co PO Box 2657 Memphis 2 Tenn p.192
Cook County Lbr Co 130th at Indiana Av Chgo 28 Ill p.69
Curtis Companies Inc Clinton Ia
Harley & Loetscher Mfg Co Dubuque Ia
Fordyce Lumber Co Fordyce Ark p.313
Frost Lumber Industries Shreveport 90 La
Gregg & Son Nashua N H p.158-159
Harbor Plywood Corp Hoquiam Wash p.21-24
W C Heller & Co Cat #40A 1050 Bryant St Montpelier O p.468
Huttig Mfg Co Box AL Muscatine Iowa p.171
Keystone Frame & Mfg Co Spokane 3 Wash
Marquart Millwork Co Oshkosh Wis p.148
Mauk Seattle Lbr Co Skinner Bldg Seattle 1 Wash p.81
The Mengel Co Inc Louisville 1 Ky p.13, 181
Midland Bldg Industries Inc Indianapolis 6 Ind
Midwest Jobbers Inc 3300-3308 S Racine Av Chgo 8 Ill p.69
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
Mutual Fir Column Co Tacoma Wash
Nashotah Moulding & Mfg Co Nashotah Wis
Nickey Brothers Co Memphis Tenn
Northwest Door & Plywood Sales Tacoma 1 Wash
Rock Island Sash & Door Wks Rock Island Ill
Segelke & Kohlhaus Co La Crosse Wis
Geo Silbernagel & Sons Co Wausau Wis
Geo J Silbernagel S S Michigan Chgo Ill p.31
Southern Pine Lumber Co Texarkana Tex
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
U S Plywood Corp 55 W 44th St NY 18 NY p.13,181
Washington Mfg Co PO Box 1544 Tacoma 1 Wash
Western Pine Mfg Co Ltd Spokane 7 Wash p.197
White Pine Sash Co Spokane 7 Wash
Willamette Valley Lbr Co Dallas Ore

NAIL PULLERS

Bridgeport Hardware Mfg Corp Bridgeport Conn
Crescent Tool Co Jamestown N Y
C Drew & Co Inc Maple St Kingston Mass
Markwell Mfg Co Inc 200 Hudson NY 13 NY
Union Hardware Co Torrington Conn
Woodings-Verona Tool Works Verona Pa

NAIL SETS, COUNTERSINKS

American Swiss File & Tool Co Elizabeth N J
Bridgeport Hdwe Mfg Corp Bridgeport Conn
Brown & Sharpe Mfg Co 235 Promenade St Providence 1 R I
Damascus Steel Prod Corp Rockford Ill
Hood Bros Frankford Philadelphia 24 Pa
Mayhew Steel Prod Inc Shelburne Falls Mass
McPherson-Huff Tool Co Sabina O
Millers Falls Co Greenfield Mass
Rainey-Tool Co Grove City Pa
The Stanley Works New Britain Conn p.253
Syracuse Twist Drill Co Univ Sta Box 38 Syracuse N Y
Vaughan & Bushnell Mfg Co 135 S La Salle Chgo Ill

NAILS

Alan Wood Steel Co Conshohocken Pa p.245
American Steel & Wire Co U S Steel Corp Sub Rockefeller Bldg Cleveland 13 Ohio p.392
Angell Nail & Chaplet Co Cleveland O
Bethlehem Steel Co Bethlehem Pa
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Columbia Steel Co Russ Bldg San Francisco 6 Cal p.392
Continental Steel Corp Kokomo Ind p.395
Copperweld Steel Co Glassport Pa
Crescent Brass & Pin Co Detroit Mich
Eastern Nail Co 50 Aleppo St Providence 9 R I
Elastic Stop Nut Corp of America 2330 Vauxhall Rd Union N J (locking) p.251
Illinois Nail Co 826 Peoria Chgo Ill
Independent Nail & Packing Co Bridgewater Mass
Jones & Laughlin Steel Corp Pittsburgh Pa
Keystone Steel & Wire Co Peoria Ill p.397
Mid-States Steel & Wire Co Crawfordsville Ind
Nichols Wire & Aluminum Co Davenport Ia (steel & aluminum)
Northwestern Steel & Wire Co Sterling Ill
Pittsburgh Steel Co Pittsburgh Pa
Republic Steel Corp Cleveland 1 Ohio
Reynolds Metals Co Bldg Products Div 2002 S 9th St Louisville 1 Ky (aluminum) p.93
Tennessee Coal Iron & RR Co U S Steel Corp Sub Birmingham Ala p.392
Wickwire Bros Inc Cortland N Y p.254
Wickwire Spencer Steel A Div of The Colorado Fuel & Iron Corp 500 Fifth Av New York 18 N Y
Wilson Steel & Wire Co W 49th and S Western Chgo Ill

NAILS—copper

Alan Wood Steel Co Conshohocken Pa p.245
Angell Nail & Chaplet Co Cleveland O
Atlas Tack Corp Fairhaven Mass
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Columbia Steel Co Russ Bldg San Francisco 6 Cal p.392
Continental Steel Corp Kokomo Ind p.395
C G Hussey & Co 2850 2nd Av Pittsburgh 19 Pa
Independent Nail & Packing Co Bridgewater Mass
Republic Steel Corp Berger Mfg Div Canton 5 Ohio
Steel & Wire Products Co Baltimore Md
Turner & Seymour Mfg Co Torrington Conn p.161

NAILS—cut

Alan Wood Steel Co Conshohocken Pa p.245
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Continental Steel Corp Kokomo Ind p.395
Eastern Nail Co 50 Aleppo St Providence 9 R I
W H Maze Co Peru Ill
Northwestern Steel & Wire Co Sterling Ill
Republic Steel Corp Cleveland 1 Ohio
Tremont Nail Co Wareham Mass
Wheeling Corrugating Co Wheeling W Va p.441

NAILS—flooring

Alan Wood Steel Co Conshohocken Pa p.245
American Steel & Wire Co U S Steel Corp Sub Rockefeller Bldg Cleveland 13 Ohio p.392
Bethlehem Steel Co Bethlehem Pa
Continental Steel Corp Kokomo Ind p.395
Independent Nail & Packing Co Bridgewater Mass
Keystone Steel & Wire Co Peoria Ill p.397
Mid-States Steel & Wire Co Crawfordsville Ind
Pittsburgh Steel Co Pittsburgh 30 Pa
Republic Steel Corp Cleveland 1 Ohio
Sheffield Steel Corp Kansas City Mo
Tennessee Coal Iron & RR Co U S Steel Corp Sub Birmingham 2 Ala p.392
Tremont Nail Co Wareham Mass

NAILS—leadhead

Continental Steel Corp Kokomo Ind p.395
Deniston Co 4856 S Western Av Chgo 9 Ill
Dickson Weatherproof Nail Co Evanston Ill
Klauer Mfg Co Dubuque Iowa
WH Maze Co Peru Ill
Mid-States Steel & Wire Co Crawfordsville Ind
Nichols Wire & Aluminum Co Davenport Ia
Republic Steel Corp Republic Bldg Cleveland 1 Ohio
Tennessee Coal Iron & RR Co U S Steel Corp Sub Rockefeller Bldg Cleveland 13 Ohio p.392

NAILS—masonry

American Steel & Wire Co U S Steel Corp Sub Rockefeller Bldg Cleveland 13 O p.392
Colorado Fuel & Iron Corp Denver Colo
Continental Steel Corp Kokomo Ind p.395
Hillwood Mfg Co Cleveland 17 Ohio
Independent Nail & Packing Co Bridgewater Mass
Republic Steel Corp Berger Mfg Div Canton 5 Ohio
Star Expansion Products Co Inc 117 Cedar St NY 6 NY
Tremont Nail Co Wareham Mass

NAILS—roofing

Alan Wood Steel Co Conshohocken Pa p.245
American Steel & Wire Co U S Steel Corp Sub Rockefeller Bldg Cleveland 13 Ohio p.392
Atlas Tack Corp Fairhaven Mass
Bethlehem Steel Co Bethlehem Pa
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Colorado Fuel & Iron Corp Denver 1 Colo
Continental Steel Corp Kokomo Ind p.395
Copperweld Steel Co Glassport Pa
Cupples Co St Louis 2 Mo p.256
Dickson Weatherproof Nail Co Evanston Ill
Edwards Mfg Co 427 Culvert St Cincinnati 2 Ohio
Inland Steel Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446-447
Jones & Laughlin Steel Corp Pittsburgh Pa
Keystone Steel & Wire Co Peoria Ill p.397
W H Maze Co Peru Ill
Mid-States Steel & Wire Co Crawfordsville Ind
Nichols Wire & Aluminum Co Davenport Iowa (steel and aluminum)
Northwestern Steel & Wire Co Sterling Ill
Pittsburgh Steel Co Pittsburgh 30 Pa
Republic Steel Corp Republic Bldg Cleveland 1 Ohio
Tennessee Coal Iron & RR Co U S Steel Corp Sub Birmingham 2 Ala p.392

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Wickwire Bros Inc Cortland N Y p.254
Wilson Steel & Wire Co 4840 S Western Av Chgo Ill

NAILS—screw type

Colonial Brass Co Middleboro Mass
Columbia Steel Co Russ Bldg San Francisco 6 Cal p.392
Continental Steel Corp Kokomo Ind p.395
Cupples Co 401 S 7th St St Louis 2 Mo (aluminum) p.256
Deniston Co 4856 S Western Av Chicago 9 Ill (and pallet)
Dickson Weatherproof Nail Co Evanston Ill
John Hassall Inc 402 Oakland Brooklyn N Y
Hillwood Mfg Co Clveland 17 O
Independent Nail & Packing Co Bridgewater Mass
W H Maze Co Peru Ill
Pittsburgh Steel Co Pittsburgh 30 Pa
Republic Steel Corp Republic Bldg Cleveland 1 Ohio

NAILS—shingle

Alan Wood Steel Co Conshohocken Pa p.245
American Steel & Wire Co U S Steel Corp Sub Rockefeller Bldg Cleveland 13 O p.392
Atlas Tack Corp Fairhaven Mass
Bethlehem Steel Co Bethlehem Pa
Chase Brass & Copper Co 236 Grand Av Waterbury 91 Conn
Colorado Fuel & Iron Corp Denver 1 Colo
Columbia Steel Co Russ Bldg San Francisco 6 Cal p.392
Continental Steel Corp Kokomo Ind p.395
Elastic Stop Nut Corp of America 2330 Vauxhall Rd Union N J (locking) p.251
Independent Nail & Packing Co Bridgewater Mass
Jones & Laughlin Steel Corp Pittsburgh Pa
Keystone Steel & Wire Co Peoria Ill p.397
W H Maze Co Peru Ill
Nichols Wire & Aluminum Co Davenport Iowa (steel & aluminum)
Northwestern Steel & Wire Co Sterling Ill
Pittsburgh Steel Co Pittsburgh 30 Pa
Republic Steel Corp Republic Bldg Cleveland 1 Ohio
Sheffield Steel Corp Kansas City Mo
Tennessee Coal Iron & RR Co U S Steel Corp Sub Birmingham 2 Ala p.392
Tremont Nail Co Wareham Mass
Wickwire Bros Inc Cortland N Y p.254
Wilson Steel & Wire Co 4840 S Western Av Chgo Ill

NETTING—wire

American Steel & Wire Co U S Steel Corp Sub Rockefeller Bldg Cleveland 13 O p.392
Colorado Fuel & Iron Corp Denver 1 Colo
Columbia Steel Co Russ Bldg San Francisco 6 Cal p.392
Continental Steel Corp Kokomo Ind p.395
Gilbert & Bennett Mfg Co Blue Island Ill
Indiana Steel & Wire Co Muncie Ind
Keystone Steel & Wire Co Peoria 7 Ill p.397
Mid-States Steel & Wire Co Davenport Iowa
Nichols Wire & Aluminum Co Davenport Ia
Northwestern Steel & Wire Co Sterling Ill
Republic Steel Corp Republic Bldg Cleveland 1 Ohio
Tennessee Coal Iron & RR Co U S Steel Corp Sub Birmingham 2 Ala p.392
Wickwire Bros Inc Cortland N Y p.254

NIPPERS

Champion-De Arment Tool Co Meadville Pa
Damascus Steel Prod Corp Rockford Ill
Lowe Mfg Co Enderlin N D
M & M Wire Clamp Co 983-17th Av S E Minneapolis 14 Minn
Peck Stow & Wilcox Co Southington Conn
Red Devil Tools Irvington 11 N J (glass) p.10
Starr Bros Bell Co East Hampton Conn
Utica Drop Forge & Tool Corp Utica N Y
Vaughan & Bushnell Mfg Co 135 S LaSalle Chgo Ill

NOSING—metal stair

The Adams Co Dubuque Iowa
American Abrasive Metals Co Irvington N J
Ames Metal Moulding Co Inc 227 E 144th St New York 51 N Y
Ford Metal Moulding Co 329 E 45th New York 17 N Y
Macklanburg-Duncan Co Oklahoma City Okla p.157,202
Goodloe E Moore Co Danville Ill
Protex Weatherstrip Mfg Co 4500 S Western Chgo Ill
Safe Tread Co Inc 30 Vesey St NY 7 NY
R D Werner Co Inc 285 Fifth Av NY 16 NY p.108-109

NOZZLES—hose

American-LaFrance-Foamite Corp Elmira N Y
W D Allen Mfg Co 566 W Lake Chgo 6 Ill
Boston Woven Hose & Rubber Co Cambridge Mass
Elkhart Brass Mfg Co Inc Elkhart Ind
A B Farquhar Co York Pa
General Detroit Corp 2272 E Jefferson Av Detroit 7 Mich
D B Smith & Co 406 Main St Utica N Y p.489

OFFICE MACHINES & SYSTEMS

Ajax Time Stamp Co 368 Broadway New York City N Y
Burroughs Adding Machine Co Detroit 32 Mich
Calculagraph Co Harrison N J
The Egry Register Co 429 E Monument Av Dayton 2 Ohio
Felt & Tarrant Mfg Co 1735 N Paulina Chgo Ill
Friden Calculating Machine Co Inc San Leandro Calif
Hamilton Autographic Register Co Hamilton Ohio
Marchant Calculating Machine Co Oakland Calif
Meilicke Systems Inc 3458-60 N Clark Chgo 13 Ill
Monroe Calculating Machine Co Inc Orange N J
Moore Business Forms Inc 900 Buffalo Av Niagara Falls N Y
The Mosler Safe Co Dept 64 32-Fifth Av NY 1 NY (insulated record containers) p.469
National Cash Register Co Dayton Ohio
Northwest Metal Products Co 1337 E Mason Green Bay Wis
Remington Rand Inc 315 Fourth New York 10 N Y
Ivan Sorvall Inc PP 45 210 Fifth Av New York 10 N Y
The Standard Register Co Dept 1301 Dayton 1 Ohio
Todd Co Inc Rochester 3 N Y
Uarco Inc 5000 S California Av Chgo 32 Ill
Underwood Corp 1 Park Av New York 16 N Y
Victor Adding Machine Co 3900 N Rockwell Chgo Ill

OIL—linseed

Archer-Daniels Midland Co 689 Roanoke Bldg Minneapolis 2 Minn p.200
Bisbee Linseed Co 2100 Lincoln Liberty Bldg Phil 7 Pa
Chi-Namel Paint & Varnish Co Minneapolis Minn
W P Fuller & Co 301 Mission San Francisco 19 Cal
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland 2 Ohio
Geo C Gordon Chemical Co Kansas City 7 Mo
Interstate Oil Co Kansas City Kansas
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Minnesota Linseed Oil Paint Co Minneapolis Minn
Mobile Paint Mfg Co Mobile 9 Ala
Sherwin-Williams Co Cleveland O
Spencer Kellogg & Sons Inc Buffalo N Y
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Technical Oil Div South Tex Cotton Oil Co Houston Tex

OUTDOOR FURNITURE

American Tent & Awning Co 1132 Mission St San Francisco 3 Cal
Beh & Co Inc 1150 Broadway NY 1 NY
Biles-Coleman Lumber Co Omak Wash p.194
Bunting Glider Co 18th & Allegheny Av Philadelphia Pa
Fence Co of America 608 S Dearborn St Chicago 5 Ill
Frostbrand Furniture Mfg Co Shreveport La
Gold Medal Folding Furniture Co Racine Wis
Thos Graham & Co Inc Madison Ind
Habitant Shops Inc Bay City Mich
Heywood-Wakefield Co Gardner Mass
Edward Hines Lumber Co 77 W Washington Chgo Ill p.14
Ideal Mfg Co Warsaw Mo
Walter S Kraus Co 43-10 48th Av Woodside N Y
Nappanee Lumber & Mfg Co Nappanee Ind
Nashotah Moulding & Mfg Co Nashotah Wis
Old Hickory Furniture Co Martinsville Ind
Harry M Wolfe 666 Lake Shore Drive Chicago 11 Ill

OVENS—electric drying

Detroit Sheet Mtl Wks Detroit Mich
Grand Rapids Vapor Kiln Inc Grand Rapids 2 Mich
Harold E Trent Co Philadelphia 27 Pa

OVENS—outdoor

The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Hancock Iron Wks Pontiac 14 Mich
Majestic Co 103 Erie St Huntington Ind p.90

PACKAGE RECEIVERS

Allen Steel Products 12911 Hillview Detroit 27 Mich
Air Control Products Inc Coopersville Mich
Copco Steel & Engineering Co 14035 Grand River Av Detroit 27 Mich
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Excel Metal Cabinet Co Jamestown NY
Gabriel Steel Co Cat A 13700 Sherwood Detroit 12 Mich p.102-103

PADLOCKS

Bemis & Call Co Springfield Mass
Best Universal Lock Co Inc 10 No Senate Indianapolis 4 Ind p.255
Chicago Lock Co 2024 Racine Av Chgo Ill
P & F Corbin Park St New Britain Conn
Dudley Lock Corp 564 W Monroe Chgo Ill
Eagle-Lock Co Terryville Conn p.232-233
Four-Way Lock Co 4619 Ravenswood Av Chgo Ill
Lockwood Hdwe Mfg Co 35 Daniels St Fitchburg Mass p.243
Master Lock Company 2600 N 32nd St Milwaukee 10 Wis
J B Miller Keyless Lock Co Kent O
S Parker Hdwe Mfg Corp 27 Ludlow St NY 2 NY
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sargent & Co PO Box 1940 New Haven 9 Conn
Segal Lock & Hdwe Co Inc 39 Broadway NY 13 NY
Slaymaker Lock Co Dept 376A Lancaster Pa p.252
Yale & Towne Mfg Co Stamford Conn p.222, 604

PAINT

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
Akron Paint & Varnish Co Akron 1 O
Alabastine Paint Prod Grand Rapids Mich
American Marietta Co 43 E Ohio Chgo 11 Ill
American Varnish Co 1126-1140 N No Branch St Chicago 22 Ill p.205
Berry Bros Inc 211 Leib St Detroit 7 Mich
Boston Varnish Co Boston Mass p.213
Breinig Bros Inc Hoboken N J
Samuel Cabot Inc 2348 Oliver Bldg Boston 9 Mass
Celadri Corp 652 Willis Av Williston Park N Y
Central Paint & Varnish Wks 69 Prospect Brooklyn N Y
Chi-Namel Paint & Varnish Co Minneapolis Minn
Devoe & Raynolds Co Inc Dept A-5 787 First Av NY 17 NY p.207

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E I du Pont de Nemours & Co Inc Wilmington 98 Del
Elliott Paint & Varnish Co 4525 Fifth Av Chgo 24 Ill p.221
Forman Ford & Co 111 S 2nd Minneapolis 1 Minn
The Foy Paint Co Inc 1776 Mentor Av Cincinnati 12 Ohio
Frazer Paint Co 2475 Hubbard Av Detroit 9 Mich
General Paint Corp 2627 Army St. San Francisco 19 Cal
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland O
Grand Rapids Varnish Corp 565 Godfrey Av S W Grand Rapids 2 Mich
Great Lakes Varnish Wks Inc 2215 N Pulaski Chgo Ill
Harbil Mfg Co Inc 325 W Ohio St Chgo 10 Ill
Harrison Paint & Varnish Co 1329 Harrison Av SW Canton 1 Ohio
Keystone Varnish Co 71 Otsego St Brooklyn 31 N Y
I F Laucks Inc 911 Western Av Seattle 4 Wash
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Lowe Bros Co Dayton 2 Ohio p.217
John Lucas & Co Philadelphia Pa
The Martin-Senour Co 2520 S Quarry St Chicago 8 Ill
John W Masury & Son Inc Baltimore Md
Minnesota Linseed Oil Paint Co Minneapolis Minn
Mobile Paint Mfg Co Mobile 9 Ala
Benj Moore & Co 511 Canal NY NY
Muralo Co Inc 566 Richmond Terrace Staten Island N Y
Murphy Paint Div Interchemical Corp 224 McWhorter Newark 1 N J
National Lead Co 111 Broadway New York 6 N Y
Ira Parker & Sons Co Oshkosh Wis p.68
Patterson-Sargent Co Cleveland O
Peaslee-Gaulbert Paint & Varnish Co Inc Louisville Ky
Perma Products Co 7007 Morgan Av Cleveland 4 Ohio p.327
Phelan-Faust Paint Mfg Co 932 Loughborough Av St Louis 11 Mo
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.209
Plasti-Kote Inc 425 Lakeside Av NW Cleveland 13 Ohio
Pratt & Lambert Inc 75 Tonawanda Buffalo 7 NY
Republic Creosoting Co Merchants Bank Bldg Indianapolis 4 Ind
Robeson Preservo Co Port Huron Mich
Rockford Paint Mfg Co N Madison at Market Rockford Ill
St Louis Surfacer & Paint Co 4200 Arlington Av St Louis 20 Mo
Sargent-Gerke Co Indianapolis 6 Ind
Sherwin-Williams Co Cleveland O
Standard Industrial Products Inc Box 325 Evansville 4 Ind
Standard Varnish Wks 2600 Richmond Terrace Staten Island 3 N Y
Steelcote Mfg Co 3418 Gratiot St Louis 3 Mo
Truscon Labs Detroit Mich
20th Century Paint & Varnish Corp 456 Driggs Av Brooklyn N Y
U S Gutta Percha Paint Co Dept 19 Dudley & Eddy Providence 1 R I
Valentine & Co Inc 11 E 36 NY NY
Vita-Var Corp 46 Albert St Newark 2 N J
The Wilbur & Williams Co 43 Leon St Boston 15 Mass

PAINT—asphalt

Abesto Mfg Corp Dept D3 Michigan City Ind p.354
Akron Paint & Varnish Co Akron 1 O
Alabastine Paint Products Grand Rapids 9 Mich
American Marietta Co 43 E Ohio Chgo 11 Ill
American Varnish Co 1136 N No Branch St Chicago 22 Ill p.205
Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Boston Varnish Co Boston 49 Mass p.213
Breinig Bros Inc Hoboken N J
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Ceresit Waterproofing Corp 512 S Canal St Chgo 7 Ill
Devoe & Raynolds Co Inc Dept A-5 787 1st Av NY 17 NY p.207
E I duPont de Nemours & Co Inc Wilmington 98 Del
Elliott Paint & Varnish Co 4525 W 5th Av Chgo 24 Ill p.221
Flintkote Co 30 Rockefeller Plaza NY 20
Forman Ford & Co 111 S 2nd St Minneapolis 1 Minn
The Foy Paint Co Inc 1776 Mentor Av Cincinnati 12 Ohio
The Gibson-Homans Co 2366 Woodhill Rd Cleveland 15 Ohio
Harbil Mfg Co Inc 325 W Ohio St Chgo 10 Ill
A C Horn Co 4326 Tenth Long Island City N Y
Keystone Asphalt Products Co 43 E Ohio St Chicago 11 Ill
Mixtite Corp North Haven Conn
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.209
Rogers Paint Products Inc 8250 St Aubin Av Detroit 11 Mich
The Ruberoid Co 500 Fifth Ave NY 18 N Y p.349
Wilbur & Williams Co 43 Leon St Boston 15 Mass

PAINT—barn and roof

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
Alabastine Paint Products Grand Rapids 9 Mich
American Varnish Co 1136 N No Branch St Chgo 22 Ill p.205
Berry Bros 211 Leib St Detroit 7 Mich
Boston Varnish Co Boston 49 Mass p.213
Breinig Bros Inc Hoboken N J
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Devoe & Raynolds Co Inc Dept A-5 787 First Av New York 17 N Y p.207
E I du Pont de Nemours & Co Inc Wilmington 98 Del
Elliott Paint & Varnish Co 4525 W Fifth Av Chicago 24 Ill p.221
Forman Ford & Co 111 S Second Minneapolis 1 Minn
The Foy Paint Co Inc 1776 Mentor Av Cincinnati 12 Ohio
Frazer Paint Co 2475 Hubbard Av Detroit 9 Mich
W P Fuller & Co 301 Mission San Francisco 19 Cal
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland O
Harbil Mfg Co Inc 325 W Ohio Chgo 10 Ill
Harrison Paint & Varnish Co 1329 Harrison Av S W Canton 1 Ohio
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Lowe Bros Co Dayton 2 Ohio p.217
John Lucas & Co Phil Pa
Martin Senour Co 2520 Quarry Chgo Ill
Minnesota Linseed Oil Paint Co Minneapolis Minn
Mobile Paint Mfg Co Mobile 9 Ala
Benj Moore & Co 511 Canal NY NY
Murphy Paint Div Interchemical Corp 224 McWhorter Newark 1 N J
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.209
Pratt & Lambert Inc 75 Tonawanda Buffalo 7 NY
Robeson Preservo Co Port Huron Mich
St Louis Surfacer & Paint Co 4200 Arlington Av St Louis 20 Mo
Sargent-Gerke Co Inidanapolis 6 Ind
Sherwin-Williams Co Cleveland O
Standard Industrial Products Inc Box 325 Evansville 4 Ind
Standard Varnish Wks Inc 2600 Richmond Terrace Staten Island 3 N Y
Steelcote Mfg Co 3418 Gratiot St Louis 3 Mo
The Sullivan Co PO Box 2606 Memphis 2 Tenn
20th Century Paint & Varnish Co 456 Driggs Av Brooklyn 11 N Y
U S Gutta Percha Paint Co Dept 19 Dudley & Eddy Sts Providence 1 R I
Valentine & Co Inc 11 E 36 NY NY
Vita-Var Corp 46 Albert St Newark 2 N J
Wadsworth Howland & Co 141 Federal Boston Mass
The Wilbur & Williams Co 43 Leon St Boston 15 Mass

PAINT—casein & cold water

Alabastine Paint Prod Grand Rapids Mich
Devoe& Raynolds Co Inc Dept A-5 787 First Av N Y 17 N Y p.207
The Foy Paint Co Inc 1776 Mentor Av Cincinnati 12 Ohio
Frazer Paint Co 2475 Hubbard Av Detroit 9 Mich
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland O
Harbil Mfg Co Inc 325 W Ohio Chgo 10 Ill
A C Horn Co 43-36 Tenth Long Island City N Y
Martin Senour Co 2520 Quarry Chgo Ill
Minnesota Linseed Oil Paint Co Minneapolis Minn
Mobile Paint Mfg Co Mobile 9 Ala
Muralo Co Inc 572 Richmond Terrace Staten Island 1 NY
National Gypsum Co Buffalo 2 N Y p.208-209
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.209
Reardon Co St Louis 6 Mo p.218-219
Ricketson Mineral Color Wks Milwaukee Wis
Rockford Paint Mfg Co N Madison at Market St Rockford Ill
Rogers Paint Products Inc 8250 St Aub'n Av Detroit 11 Mich
The Sargent-Gerke Co Indianapolis 6 Ind
Sherwin-Williams Co Cleveland O
Steelcote Mfg Co 3418 Gratiot St Louis 3 Mo
Tamms Silica Co 228 N LaSalle Chgo 1 Ill p.449
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293
Wesco Waterpaints Inc East Boston Mass
The Wilbur & Williams Co 43 Leon St Boston 15 Mass

PAINT—cement, brick, concrete

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
Alabastine Paint Prod Grand Rapids Mich
American Varnish Co 1136 N No Branch St Chgo 22 Ill p.205
Anti-Hydro Waterproofing Co 265 Badger Av Newark 8 N J
Blue Ridge Talc Co Inc Henry Va
Boston Varnish Co Boston 49 Mass p.213
Builders Products 500 N Dearborn Chgo Ill p.211
Samuel Cabot Inc 2348 Oliver Bldg Boston 9 Mass
Celadri Corp 652 Willis Ave Williston Park N Y
Ceresit Waterproofing Corp 512 S Canal St Chgo 7 Ill
Devoe & Raynolds Co Inc Dept A-5 787 1st Av N Y 17 N Y p.207
E I du Pont de Nemours & Co Inc Wilmington 98 Del
Elliott Paint & Varnish Co 4525 W Fifth Av Chicago 24 Ill p.221
Evercrete Corp 424 W 42nd St NY NY
M Ewing Fox Co Inc 240 E 136th NY NY
Forman Ford & Co 111 S 2nd Minneapolis 1 Minn
The Foy Paint Co Inc 1776 Mentor Av Cincinnati 12 Ohio
Frazer Paint Co 2475 Hubbard Av Detroit 9 Mich
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland O
Harbil Mfg Co Inc 325 W Ohio Chgo 10 Ill
Harrison Paint & Varnish Co 1329 Harrison Av S W Canton 1 Ohio
Haynes Products Co 4007 Farnam St Omaha 3 Neb
A C Horn Co 43-36 Tenth Long Island City N Y
Kay-Tite Co West Orange N J
Koppers Co Inc Pittsburgh 19 Pa
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Lowe Bros Co Dayton 2 Ohio p.217
Medusa Portland Cement Co 1046-1 Midland Bldg Cleveland 15 Ohio p.457
Minnesota Linseed Oil Paint Co Minneapolis Minn
Mobile Paint Mfg Co Mobile 9 Ala
Benj Moore & Co 511 Canal NY NY
Muralo Co Inc 566 Richmond Terrace Staten Island N Y
National Gypsum Co Buffalo 2 N Y p.208-209
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
Ohio Hydrate & Supply Co Woodville O p.448
Penn Crete Products Co 20th & Lippincott Sts Philadelphia 32 Pa
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.209
Plasti-Kote Inc 425 Lakeside Av N W Cleveland 13 Ohio
Reardon Co St Louis 6 Mo p.218-219
Republic Creosoting Co Merchants Bank Bldg Indianapolis 4 Ind
Sherwin-Williams Co Cleveland O
Smooth-On Mfg Co 568-574 Communipaw Av Jersey City 4 N J
L Sonneborn Sons Inc 88 Lexington Av NY 16 NY
Steelcote Mfg Co 3418 Gratiot St Louis 3 Mo
The Sullivan Co P O Box 2606 Memphis 2 Tenn
Tamms Silica Co 228 N LaSalle Chgo 1 Ill p.449
Truscon Labs Detroit Mich

Number after listing indicates page on which advertisement appears

Weather Seal Co 10 E Pearl St Cincinnati 2 Ohio
Wilbur & Williams Co 43 Leon St Boston 15 Mass

PAINT—dry kiln

Alabastine Paint Products Grand Rapids 9 Mich
Black Cat Corp Hattiesburg Miss
Breinig Bros Inc Hoboken N J
Devoe & Raynolds Co Inc Dept A-5 787 First Av N Y 17 N Y p.207
Globe Paint Works Inc Williamsport 5 Pa
Harbil Mfg Co Inc 310 W Ohio Chgo 10 Ill
Mobile Paint Mfg Co Mobile 9 Ala
Moore Dry Kiln Co P O Box 4248 Jacksonville 1 Fla p.65
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.209
Rockford Paint Mfg Co N Madison at Market St Rockford Ill
U S Gutta Percha Paint Co Dept 19 Dudley & Eddy Sts Providence 1 R I

PAINT—lead

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
Akron Paint & Varnish Co Akron 1 O
Alabastine Paint Products Grand Rapids 9 Mich
American Marietta Co 43 E Ohio Chgo 11 Ill
American Varnish Co 1136 N No Branch St Chgo 22 Ill p.205
Boston Varnish Co Boston 49 Mass p.213
Breinig Bros Inc Hoboken N J
Commonwealth Varnish Co 4124 Parker Av Chicago 39 Ill
Devoe & Raynolds Co Inc Dept A-5 787 1st Av N Y 17 N Y p.207
The Eagle Picher Co American Bldg Cincinnati 1 Ohio
Enterprise Paint Mfg Co 337 S Peoria Chgo 7 Ill
Forman Ford & Co 111 S Second Minneapolis 1 Minn
Frazer Paint Co 2475 Hubbard Av Detroit 9 Mich
W P Fuller & Co 301 Mission San Francisco 19 Cal
General Paint Corp 2627 Army St San Francisco 19 Cal
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland O
Harbil Mfg Co Inc 310 W Ohio Chgo 10 Ill
Hoboken White Lead & Color Works 15th & Adams St Hoboken N J
A C Horn Co 43-42 Tenth Long Island City 1 NY
Inland White Lead Co 741 W Gladys Chgo Ill
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Mobile Paint Mfg Co Mobile 9 Ala
Natl Lead Co 111 Broadway NY NY
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.209
Pratt & Lambert Inc 75 Tonawanda St Buffalo 7 N Y
Rockford Paint Mfg Co N Madison at Market Rockford Ill
St Louis Surfacer & Paint Co 4200 Arlington Av St Louis 20 Mo
Sherwin-Williams Co Cleveland O
Steelcote Mfg Co 3418 Gratiot St Louis 3 Mo
Truscon Labs Detroit Mich
Vita-Var Corp 46 Albert St Newark 2 N J
Geo D Wetherill & Co 113 Arch St Philadelphia 6 Pa
Wilbur & Williams Co 43 Leon St Boston 15 Mass

PAINT—lumber end check degrade

The Akron Paint & Varnish Co Akron 1 Ohio
Black Cat Corp Hattiesburg Miss
Breinig Bros Inc Hoboken N J
Devoe & Raynolds Co Inc Dept A-5 787 First Av New York 17 N Y p.207
Harbil Mfg Co 325 W Ohio Chgo 10 Ill
Minnesota Linseed Oil Paint Co Minneapolis Minn
Moore Dry Kiln Co P O Box 4248 Jacksonville 1 Fla p.65
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
Wilbur & Williams Co 43 Leon St Boston 15 Mass

PAINT—marine

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
Alabastine Paint Products Grand Rapids 9 Mich
American Varnish Co 1136 N No Branch St Chgo 22 Ill p.205
Boston Varnish Co Boston 49 Mass p.213
Breinig Bros Inc Hoboken N J
Builders Products 500 N Dearborn Chgo Ill p.211
Devoe & Raynolds Co Inc Dept A-5 787 1st Av N Y 17 N Y p.207
E I du Pont de Nemours & Co Inc Wilmington 98 Del
Eagle-Picher Co American Bldg Cincinnati 1 Ohio
Forman Ford & Co 111 S 2nd St Minneapolis 1 Minn
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland O
Harbil Mfg Co Inc 325 W Ohio Chgo 10 Ill
A C Horn Co 43-36 Tenth Long Island City N Y
Lowe Bros Co Dayton 2 Ohio p.217
John Lucas & Co Inc Philadelphia Pa
Minnesota Linseed Oil Paint Co Minneapolis Minn
Mobile Paint Mfg Co Mobile 9 Ala
Paraffine Companies Inc 475 Brannan St San Francisco 19 Calif
The Patterson-Sargent Co 1325 E 38th St Cleveland 14 Ohio
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.209
Plasti-Kote Inc 425 Lakeside Av NW Cleveland 13 Ohio
Pratt & Lambert Inc 75 Tonawanda St Buffalo 7 N Y
Rockford Paint Mfg Co N Madison at Market St Rockford Ill
The Sargent-Gerke Co Indianapolis 6 Ind
Sherwin-Williams Co Cleveland O
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Tremco Mfg Co 8701 Kinsman Road Cleveland 4 Ohio
Valentine & Co Inc 11 E 36th NY 16 NY
Vita-Var Corp 46 Albert St Newark 2 N J
The Wilbur & Williams Co 43 Leon St Boston 15 Mass

PAINT—metallic

Alabastine Paint Prod Grand Rapids Mich
American Marietta Co 43 E Ohio Chgo 11 Ill
American Varnish Co 1136 N No Branch St Chgo 22 Ill p.205
Breinig Bros Inc Hoboken N J
Commonwealth Varnish Co 4124 W Parker Av Chicago 39 Ill
Devoe & Raynolds Co Inc Dept A-5 787 1st Av N Y 17 N Y p.207
E I du Pont de Nemours & Co Inc Wilmington 98 Del
Eagle-Picher Co American Bldg Cincinnati 1 Ohio
Forman Ford & Co 111 S 2nd St Minneapolis 1 Minn
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland O
Harbil Mfg Co 325 W Ohio Chgo 10 Ill
Koppers Co Inc Pittsburgh 19 Pa
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Lowe Bros Co Dayton 2 Ohio p.217
Minnesota Linseed Oil Paint Co Minneapolis Minn
Mobile Paint Mfg Co Mobile 9 Ala
Phelan-Faust Paint Mfg Co 932 Loughborough Av St Louis 11 Mo
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.209
Plasti-Kote Inc 425 Lakeside Av NW Cleveland 13 Ohio
Pratt & Lambert Inc 75 Tonawanda St Buffalo 7 N Y
Reilly Tar & Chemical Corp 1615 Merchants Bank Bldg Indianapolis 4 Ind
St Louis Surfacer & Paint Co 4200 Arlington Av St Louis 20 Mo
The Sargent-Gerke Co Indianapolis 6 Ind
Sherwin-Williams Co Cleveland O
Standard Industrial Products Inc Box 325 Evansville 4 Ind
Steelcote Mfg Co 3418 Gratiot St Louis 3 Mo
Truscon Laboratories Inc Detroit 11 Mich
U S Gutta Percha Paint Co Dept 19 Dudley & Eddy Sts Providence 1 R I
Valentine & Co Inc 11 E 36th NYC NY
Vita-Var Corp 46 Albert St Newark 2 N J

PAINT AGITATORS

Binks Mfg Co 3124 W Carroll Av Chgo Ill
J H Day Co Cincinnati O
Devoe & Raynolds Co Inc Dept A-5 787 First Av New York 17 N Y p.207
Edge Moor Iron Wks 30 Rockefeller Plaza NY NY
Fanner Mfg Co Cleveland O
Harbil Mfg Co 325 W Ohio Chgo 10 Ill
Miracle Paint Rejuvenator Co St Paul 1 Minn
Paasche Airbrush Co 1909 W Diversey Chgo Ill
Tamms Silica Co 228 N La Salle St Chicago 1 Ill p.449

PAINT APPLICATORS

A B Carlson & Co 349 Woodlawn Av Aurora 9 Ill p.221
Central States Wallmaster Inc 1140 Lake St Oak Park Ill
Red Devil Tools Irvington 11 N J p.10

PAINT REMOVER

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
Alabastine Paint Products Grand Rapids 9 Mich
American Marietta Co 43 E Ohio Chgo 11 Ill
Baltimore Paint & Color Works Baltimore 23 Md
Berry Bros Inc 211 Leib St Detroit 7 Mich
Boston Varnish Co Boston 49 Mass p.213
Chemical Supply Co 225 Plymouth Bldg Cleveland 15 Ohio
Devoe & Raynolds Co Inc Dept A-5 787 First Av New York 17 N Y p.207
The Dow Chemical Co Midland Mich
Elliott Paint & Varnish Co 4525 W 5th Av Chgo 24 Ill p.221
Forman Ford & Co Minneapolis 1 Minn
W P Fuller & Co 301 Mission San Francisco 19 Cal
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland O
Industrial Chemical Development Corp 347 Madison Av New York 17 N Y
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Lowe Bros Co Dayton 2 Ohio p.217
Martin Senour Co 2520 Quarry Chgo Ill
Minnesota Linseed Oil Paint Co Minneapolis Minn
Oakite Products Inc 22 Thames New York 6 N Y
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
The Patterson-Sargent Co 1325 E 38th St Cleveland 14 Ohio
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.209
Pratt & Lambert Inc 75 Tonawanda Buffalo 7 NY
Rockford Paint Mfg Co N Madison St at Market Rockford Ill
The Savogran Co 25 Huntington Av Boston 16 Mass
Schalk Chemical Co 351 E Second St Los Angeles 12 Calif
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Tamms Silica Co 228 N La Salle St Chicago 1 Ill p.449
Valentine & Co Inc 11 E 36th NY 16 NY
Vita-Var Corp 46 Albert St Newark 2 N J
Wadsworth Howland & Co 141 Federal St Boston Mass
Woodfinishing Products Co 34 Industrial St New York 61 N Y

PAINT SPRAYERS

Binks Mfg Co 3124 Carroll Av Chicago 12 Ill
Devoe & Raynolds Co Inc Dept A-5 787 First Av New York 17 N Y p.207
DeVilbiss Co Toledo 1 Ohio
Electric Sprayit Co 15th & Illinois Sheboygan Wis
H D Hudson Mfg Co Dept D-16 589 E Illinois St Chgo 11 Ill
Lowell Mfg Co Dept 63 589 E Illinois St Chicago Ill
Macleod Co 2236 Bogen St Cincinnati 22 Ohio
Paasche Airbrush Co 1909 W Diversey Chicago Ill
Paysaell Sprayer-Selleo Corporation 815 Andrus Bldg Minneapolis 2 Minn p.203
Pittsburgh Plate Glass Co Grant Bldg Pittsburgh 19 Pa p.209
Stewart-Warner Corp 1828 Diversey Pkwy Chicago 14 Ill

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PAINTERS DROP CLOTHS

American Tent & Awning Co 1132 Mission St San Francisco 3 Cal
The Astrup Co 2937 W 25th St Cleveland 13 Ohio
Canvas Products Co 1240 S 7th St St Louis 4 Mo
Fulton Bag & Cotton Mills Atlanta 1 Ga
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Standard Awning Co 83 Avon St Hartford 5 Conn
Werner Canvas Products Co 609 Bergen St Brooklyn 17 N Y

PAINTERS' SUPPLIES

The Bengal Co 214 St Nicholas Av New York 27 N Y
Devoe & Raynolds Co Inc Dept A-5 787 First Av New York 17 N Y p.207
Harbil Mfg Co Inc 325 W Ohio Chgo 10 Ill
Holley Chemical Co 122 E 25th St New York 10 N Y (deodorant)
Landers Frary & Clark New Britain Conn
W W Lawrence & Co 1124 W Carson Pittsburgh 19 Pa
Ira Parker & Sons Co Oshkosh Wis p.68
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.209
Red Devil Tools Irvington 11 N J p.10
Stencil Specialty Co 388 Ocean Av Jersey City N J
United Wire Goods Mfg Co Inc 1150 Broadway New York N Y
Warner Mfg Co 801 16th Av S E Minneapolis 14 Minn
Wendell Mfg Co 4234 N Lincoln Av Chgo 18 Ill

PALLETS—wooden

Carr & Moehl Co Des Moines 9 Iowa
Northwest Door & Plywood Sales Tacoma 1 Wash

PANELS—floor, wall, ceiling

Allied Synthetics Co PO Box 136 San Diego 9 Cal (translucent)

PAPER—asbestos

Acme Asbestos Covering & Flooring Co 246 N Elizabeth Chgo 7 Ill
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 O p.336
Curtis Mfg & Asbestos Co 29 Lewis Wharf Boston 10 Mass
Ehret Magnesia Mfg Co Inc Valley Forge Pa
Johns-Manville Corp Box 290 22 E 40th N Y 16 N Y p.280, 301, 347, 375
Keasbey & Mattison Co Ambler Pa p.325
The Ruberoid Co 500 Fifth Av NY 18 N Y p.349
Thilmany Pulp & Paper Co Kaukauna Wis

PAPER—building, roofing & sheathing

Angier Corp Framingham Mass
Barrett Div Allied Chemical & Dye Corp 40 Rector N Y 6 N Y p.351
Bird & Son Inc East Walpole Mass p.333, 356
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 O p.336
Certain-teed Prods Corp 120 E Lancaster Av Ardmore Pa
Fleming & Sons Inc Dallas Tex
Hosking Paper Co Wilmette Ill
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Johns-Manville Corp Box 290 22 E 40th N Y 16 N Y p.280, 301, 347, 375
Keystone Asphalt Products Co 43 E Ohio St Chicago 11 Ill
Paraffine Companies Inc 475 Brannan St San Francisco 19 Calif
Prestile Engineering Co 3900 Chouteau St St Louis Mo
Protective Papers Inc McHenry County Union Ill p.354
Republic Creosoting Co Merchants Bank Bldg Indianapolis 4 Ind
The Richkraft Co 228 N LaSalle Chicago 1 Ill p.341
The Ruberoid Co 500 Fifth Av N Y 18 N Y p.349
The Sisalkraft Co Dept AL 205 W Wacker Dr Chgo 6 Ill p.335
Thilmany Pulp & Paper Co Kaukauna Wis
Welt & Sons Paper Co 426 W Larned St Detroit 25 Mich

PAPER—concrete curing

Angier Corp Framingham Mass
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Keystone Asphalt Products Co 43 E Ohio St Chicago 11 Ill
Protective Papers Inc McHenry County Union Ill p.354
The Richkraft Co 228 N La Salle Chicago 1 Ill p.341
The Ruberoid Co 500 Fifth Av NY 18 NY p.349
The Sisalkraft Co Dept AL 205 W Wacker Dr Chgo 6 Ill p.335
Welt & Sons Paper Co 426 W Larned St Detroit 26 Mich

PARTITIONS—glass wall

Libbey-Owens-Ford Glass Co Toledo O p.269-272
Pennsylvania Wire Glass Co 1612 Market Philadelphia 3 Pa
Pittsburgh Plate Glass Co 2143-9 Grant Bldg Pittsburgh 19 Pa p.267

PASTE—wallpaper

The Commercial Paste Co Buttles at Michigan Columbus 8 Ohio
Crescent Products Co Terre Haute Ind
H B Fuller Co 255 Engle St St Paul 2 Minn
Patent Cereals Co Geneva N Y
Placo Div Paisley Products Inc 718 Washington Av North Minneapolis Minn

PATCHER—concrete

Ceresit Waterproofing Corp 512 S Canal Chgo 7 Ill
Curtis Mfg & Asbestos Co 29 Lewis Wharf Boston 10 Mass
Evercrete Corp 424 W 42nd NY NY
Rutland Fire Clay Co Rutland Vermont
Schalk Chemical Co 351 E 2nd St Los Angeles 12 Calif
Tamms Silica Co 228 N La Salle St Chicago 1 Ill p.449
United Gilsonite Laboratories Scranton 1 Pa

PENCILS—carpenters'

Blaisdell Pencil Co Philadelphia Pa
Eugene Dietzgen Co 2425 N Sheffield Av Chicago 14 Ill
Jos Dixon Crucible Co Jersey City N J
Eagle Pencil Co 703 E 13th NY 9 NY
Economy Novelty & Prtg Co 225 W 39 NY 18 NY
A W Faber Inc Newark N J
The Thos D Murphy Co Red Oak Iowa
Shedd-Brown Mfg Co Minneapolis 15 Minn.

PENCILS—drawing

American Crayon Co Sandusky Ohio
Jos Dixon Crucible Co Jersey City 3 N J
Eagle Pencil Co 703 E 13th NY 9 NY
Eugene Dietzgen 2425 N Sheffield Av Chgo Ill
Keuffel & Esser Co Adams & Third Hoboken N J
Koh-I-Noor Pencil Co 373 Fourth Av NY NY

PIPE—asbestos cement

Johns-Manville Corp Box 290 22 E 40th N Y 16 N Y p.280, 301, 347, 375
Keasbey & Mattison Co Ambler Pa p.325
Smith & Kanzler Inc Elizabeth N J
Universal Sewer Pipe Co 1500 Union Commerce Bldg Cleveland 14 Ohio

PIPE—clay, sewer

Cannelton Sewer Pipe Co Inc Cannelton Ind
Clay City Pipe Co Uhrichsville Ohio
Columbia Pipe Co Columbia S C
Dee Clay Products Co Bloomingdale Ind
Dennison Sewer Pipe Corp 334 Prospect Av Cleveland 15 Ohio
Denver Sewer Pipe & Clay Co Denver Colo
W S Dickey Clay Mfg Co 922 Walnut St Kansas City 6 Mo
Evans Pipe Co Uhrichsville O
Gladding-McBean & Co San Francisco 3 Calif
Laclede-Christy Clay Prod Co St Louis Mo
Lehigh Sewer Pipe & Tile Co Ft Dodge Ia
National Clay Pipe Mfrs Inc 100 N La Salle St Chicago 2 Ill p.458
Owensboro Sewer Pipe Co Inc Owensboro Ky
Robinson Clay Products Co Akron O
Streator Drain Tile Co Streator Ill
Universal Sewer Pipe Co 1500 Union Commerce Bldg Cleveland 14 Ohio
Washington Brick & Lime Co Box 2198 Spokane 8 Wash
What Cheer Clay Prod Co What Cheer Ia

PIPE—conductor, eaves trough

American Rolling Mill Co Middletown O
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Inland Steel Products Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446-447
Klauer Mfg Co Dubuque Ia
La Crosse Steel Roofing & Corrugating Co La Crosse Wis
Martin Metal Mfg Co Wichita Kans
Newport Rolling Mill Co Newport Ky
Nichols Wire & Aluminum Co Davenport Ia
Mid-States Steel & Wire Co Crawfordsville Ind
Northwest Metal Prod Inc Seattle 4 Wash
Reeves Steel & Mfg Co Dover Ohio
Republic Steel Corp Republic Bldg Cleveland 1 Ohio
St Paul Corrugating Co St Paul 1 Minn
Tiffin Art Metal Co Tiffin 16 Ohio
Wheeling Corrugating Co Wheeling W Va p.441
Williams-Wallace Co San Francisco Calif
York Corrugating Co York Pa

PIPE—fibre

Crane Company 836 S Michigan Av Chgo Ill
Fibre Conduit Co Orangeburg NY

PIPE—iron culvert

American Rolling Mill Co Middletown Ohio
Beall Pipe & Tank Corp Portland Ore
Newport Rolling Mill Co Newport Ky
Republic Steel Corp Republic Bldg Cleveland 1 Ohio
St Paul Corrugating Co St Paul Minn

PIPE—steel & wrought iron

American Rolling Mill Co Middletown Ohio
Beall Pipe & Tank Corp Portland Ore
Bethlehem Steel Co Bethlehem Pa
A M Byers Co Clark Bldg Pittsburgh 30 Pa
Crane Company 836 S Michigan Av Chgo Ill
Dempster Mill Mfg Co Beatrice Neb
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Jones & Laughlin Steel Corp Pittsburgh Pa
Laclede Steel Co St Louis Mo
National Tube Co U S Steel Corp Sub Frick Bldg Pittsburgh 30 Pa
Olson Mfg Co Albert Lea Minn
Republic Steel Corp Republic Bldg Cleveland 1 Ohio
Youngstown Sheet & Tube Co Youngstown 1 Ohio

PIPE—wood

Arrow Tank Co Inc 16 Barnett St Buffalo 15 N Y
Baltimore Cooperage Tank & Tower Co Baltimore Md
W E Caldwell Co Louisville 8 Ky
Caspar Lbr Co San Francisco Calif
M & M Wood Working Co Resnprest Div 2301 N Columbia Portland 3 Ore
Redwood Mfrs Co Pittsburg Calif
Willamette Valley Lbr Co Dallas Ore
A Wyckoff & Son Co Elmira N Y

PIPE CLEANERS—chemical

L B Allen Co Inc 6727 W Bryn Mawr Av Chgo Ill
Amer Prods Co Cincinnati O

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B T Babbitt Inc 386 4th Av New York 16 N Y
Boyer Chem Laby Co Inc 2700 Wabash Av Chgo Ill
R M Hollingshead Co Camden N J
The Knack Corp 556 Jefferson Ct Detroit 7 Mich
Oakite Products Inc 22 Thames New York 6 N Y
Pennsylvania Salt Mfg Co Philadelphia 7 Pa
Pittsburgh Plate Glass Co Baltimore 29 Md p.209
Saginaw Salt Prods Co Saginaw Mich

PIPE COVERING—asbestos

Acme Asbestos Covering & Flooring Co 246 N Elizabeth Chgo 7 Ill
Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Asbestos Asphalt & Insulation Mfg Co 2100 Fullerton Av Chicago 47 Ill
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 O p.336
Curtis Mfg & Asbestos Co 29 Lewis Wharf Boston 10 Mass
Ehret Magnesia Mfg Co Inc Valley Forge Pa
Johns-Manville Corp Box 290 22 E 40th N Y 16 N Y p.280, 301, 347, 375
Keasbey & Mattison Co Ambler Pa p.325
The Paraffine Companies Inc 425 Brannan St San Francisco 19 Cal
Smith & Kanzler Inc Elizabeth 2 N J
Standard Asbestos Mfg Co 860 Evergreen Av Chgo 22 Ill

PIPE JOINT COMPOUNDS

Blue Ridge Talc Co Inc Henry Va
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Curtis Mfg & Asbestos Co 29 Lewis Wharf Boston 10 Mass
Jos Dixon Crucible Co Jersey City N J
Frazer Paint Co 2475 Hubbard Av Detroit 9 Mich
Irvington Varnish & Insulator Co Irvington N J
Koppers Co Inc Tar Products Div Pittsburgh 19 Pa
Lake Chemical Co 162-P N Clinton Chicago 6 Ill p.255
Republic Creosoting Co Merchants Bank Bldg Indianapolis 4 Ind
Sauereisen Cements Co 2218 Sharpsburg St Pittsburgh 15 Pa
Smooth-On Mfg Co 568-574 Communipaw Av Jersey City 4 N J
So-Lo Wks Inc Loveland O
The Sullivan Co PO Box 2606 Memphis 2 Tenn
What Cheer Clay Products Co What Cheer Iowa
X-Pando Corp 43-15 36th Long Island City 1 N Y

PIPE & TUBING—plastic

Broadway Rubber Mfg Co 529 E Broadway Louisville 2 Ky
Detroit Macoid Corp Detroit Mich
Extruded Plastics Inc Norwalk Conn
The B F Goodrich Co Akron Ohio
Irvington Varnish & Insulator Co Irvington N J
Raybestos-Manhattan Inc Passaic N J

PLAN SERVICES—house, farm

Brown-Blodgett Co St Paul Minn
Easi-Bild Pattern Co Pleasantville N Y
L F Garlinghouse Co Topeka Kan
Home Plan Book Co 1596 Selby Av St Paul 4 Minn
Home Planners Inc 11711 E 8 Mi Rd East Detroit Mich
Lumbermans Plan Service 120 Machin Peoria 5 Ill p.500
National Plan Service Inc 1315 W Congress Chgo 7 Ill

PLANK—extension

W W Babcock Co Bath N Y
Breyer Bros Whiting & Co Waupun Wis
J R Clark Co Spring Park Minn
Goshen Mfg Co 10th & Reynolds Sts Goshen Ind
Holland Ladder & Mfg Co Holland Mich
John S Tilley Ladders Co Inc Watervliet N Y
Warner Mfg Co Minneapolis 14 Minn
Woodenware Products Corp 122 N 7th St St Louis 1 Mo

PLANK—fibre, insulating

Celotex Corp 120 S LaSalle Chgo 3 Ill p.297, 329, 369, 439
Cole Mfg Co PO Box 2657 Memphis 2 Tenn p.192
Fir-Tex Porter Bldg Portland 4 Ore
Hawaiian Cane Products Ltd Culver City Calif
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Insulite Div Minnesota & Ontario Paper Co Dept AL-49 500 Baker Arcade Bldg Minneapolis 2 Minn p.285
Johns-Manville Corp Box 290 22 E 40th New York 16 N Y p.280, 301, 347, 375
National Gypsum Co Buffalo 2 N Y p.298-299
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
U S Gypsum Co 300 W Adams St Chicago 6 Ill p.293

PLASTER—acoustical

Certain-teed Prods Corp 120 E Lancaster Av Ardmore Pa
E D Coddington Mfg Co 5024 N 37th St Milwaukee 9 Wis
Kelley Island Lime & Transport Co 1122 Leader Bldg Cleveland 14 Ohio
National Gypsum Co Buffalo 2 N Y p.298-299
B F Nelson Mfg Co Minneapolis 13 Minn
Sealcon Products Inc 927 Second Av S Minneapolis 2 Minn
Sno-Lite Products Co 232 W First St Reno Nev
The Sullivan Co PO Box 2606 Memphis 2 Tenn
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293
Western Mineral Products Co Milwaukee 4 Wis
Zonolite Company Dept ALM-49 135 S La Salle Chgo 3 Ill p.363

PLASTER—casting

Certain-teed Prods Corp 120 E Lancaster Ave Ardmore Pa
National Gypsum Co Buffalo 2 N Y p.298-299
Sealcon Products Inc 927 Second Av S Minneapolis 2 Minn
Tamms Silica Co 228 N LaSalle Chgo 1 Ill p.449
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

PLASTER—cedar

E D Coddington Mfg Co 5024 N 37th St Milwaukee 9 Wis

PLASTER—colored finishing

Alabastine Paint Products Grand Rapids 9 Mich
E D Coddington Mfg Co 5024 N 37th St Milwaukee 9 Wis
Grand Rapids Plaster Co Grand Rapids 2 Mich
Ohio Hydrate & Supply Co Woodville O p.448
Penn Crete Products Co 20th & Lippincott Sts Philadelphia 32 Pa
Sealcon Products Inc 927 Second Av S Minneapolis 2 Minn
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

PLASTER—fibered

Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
E D Coddington Mfg Co 5024 N 37th St Milwaukee 9 Wis
Grand Rapids Plaster Co Grand Rapids 2 Mich
Ideal Cement Co Colorado Portland Div 821 17th St Denver 2 Colo
National Gypsum Co Buffalo 2 N Y p.298-299
Ohio Hydrate & Supply Co Woodville O p.448
Sealcon Products Inc 927 Second Av S Minneapolis 2 Minn
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293
Woodville Lime Prods Co Toledo O

PLASTER—gypsum

Celotex Corp 120 S LaSalle Chgo 3 Ill p.297, 329, 369, 439
Certain-teed Prods Corp 120 E Lancaster Av Ardmore Pa
E D Coddington Mfg Co 5024 N 37th St Milwaukee 9 Wis
Fairmont Wall Plaster Co Fairmont W Va
Grand Rapids Plaster Co Grand Rapids 2 Mich
Ideal Cement Co Colorado Portland Div 821 17th St Denver 2 Colo
National Gypsum Co Buffalo 2 N Y p.298-299
Sealcon Products Inc 927 Second Av S Minneapolis 2 Minn
Tamms Silica Co 228 N LaSalle Chgo 1 Ill p.449
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

PLASTER—insulating

Sealcon Products Inc 927 Second Av S Minneapolis 2 Minn
Sno-Lite Products Co 232 W First St Reno Nevada
Zonolite Company Dept ALM-49 135 S La Salle Chgo 3 Ill p.363

PLASTER—lime

Grand Rapids Plaster Co Grand Rapids 2 Mich
Kelley Island Lime & Transport Co 1122 Leader Bldg Cleveland 14 Ohio
Ohio Hydrate & Supply Co Woodville O p.448
Sealcon Products Inc 927 Second Av S Minneapolis 2 Minn
Woodville Lime Prods Toledo O

PLASTER—patching

Alabastine Paint Products Grand Rapids 9 Mich
Certain-teed Prods Corp 120 E Lancaster Ave Ardmore Pa
E D Coddington Mfg Co 5024 N 37th St Milwaukee 9 Wis
Commercial Paste Co Buttles at Michigan Columbus 8 Ohio
Curtis Mfg & Asbestos Co 29 Lewis Wharf Boston 10 Mass
Donald Durham Co P O Box 804 Des Moines 4 Iowa p.221
H B Fuller Co 255 Engle St St Paul 2 Minn
Grand Rapids Plaster Co Grand Rapids 2 Mich
Muralo Co Inc 566 Richmond Terrace Staten Island N Y
National Gypsum Co Buffalo 2 N Y p.298-299
Reardon Co St Louis Mo p.218-219
Rutland Fire Clay Co Rutland Vt
Savogran Co 25 Huntington Av Boston 16 Mass
Schalk Chemical Co 351 E 2nd St Los Angeles 12 Calif
Sealcon Products Inc 927 Second Av S Minneapolis 2 Minn
Tamms Silica Co 228 N LaSalle Chgo 1 Ill p.449
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293
United Gilsonite Laboratories Scranton Pa

PLASTER—vermiculite

Mission Lime Products Corp 841 Ducommun St Los Angeles 12 Cal
National Gypsum Co Buffalo 2 N Y p.298-299
Zonolite Company Dept AL-48 135 S LaSalle St Chicago 3 Ill p.363

PLASTERBOARD

Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Celotex Corp 120 S LaSalle Chgo 3 Ill p.297, 329, 369, 439
Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
Grand Rapids Plaster Co Grand Rapids 2 Mich
Keystone Asphalt Products Co 43 E Ohio St Chicago 11 Ill
National Gypsum Co Buffalo 2 N Y p.298-299
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

PLASTER OF PARIS

Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
Grand Rapids Plaster Co Grand Rapids 2 Mich
Ideal Cement Co Colorado Portland Div 821 17th St Denver 2 Colo
National Gypsum Co Buffalo 2 N Y p.298-299
Ricketson Mineral Color Wks Milwaukee Wis
Tamms Silica Co 228 N LaSalle Chgo 1 Ill p.449
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

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PLASTIC—waterproof

Anti-Hydro Waterproofing Co 265 Badger Av Newark 8 N J
E I du Pont de Nemours & Co Inc Wilmington 98 Del
Formica Insulation Co 4501 Spring Grove Av Cincinnati 32 O
The Lehon Co 4425 S Oakley Av Chgo 9 Ill
Ranetite Mfg Co Inc 1917 S Broadway St Louis Mo
The Sullivan Co PO Box 2606 Memphis 2 Tenn
Technical Supply Co 1911 University Av Palo Alto Calif

PLASTIC SURFACING

Aetna Plywood & Veneer Co 1732 Elston Av Chgo 22 Ill p.11
Consolidated White Power & Paper Plastics Div Wisconsin Rapids Wis
Formica Insulation Co 4501 Spring Grove Av Cincinnati 32 Ohio
Lacton Glue Mfg Co 611 Broadway N Y 12
S & W Mouldings 980 Parsons Av Columbus 6 Ohio
Superior Wall Products Co 4413 N American St Philadelphia 40 Pa p.300
Webb Products Co 242 S G St San Bernardino Cal

PLASTICIZED WOOD PUTTY

Boyle-Midway Inc 257 Cornelison Av Jersey City 2 N J p.220
Breinig Bros Inc Hoboken N J
Mobile Paint Mfg Co Mobile 9 Ala
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Tamms Silica Co 228 N LaSalle Chgo 1 Ill p.449
Webb Products Co San Bernardino Calif & Norcross Ga

PLATES—mail box

Allied Hardware Corp 328 Grand Av Brooklyn 5 N Y
Champion Hdwe Co Geneva O
P & F Corbin New Britain Conn
Fiwale Equipment Mfg Co 165 Church NY 7 NY
Natl Brass Co Grand Rapids Mich
Norwalk Lock Co 395 Broadway NY 13 NY
Peabody-Acker Inc 5816 Hooper Av Los Angeles Calif
Reading Hdwe Corp 6th & Willow Sts Reading Pa
Russell & Erwin Div The American Hardware Corp New Britain Conn p.241
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Standard Bronze Co Bayonne S N J p.255

PLATES—push & kick

Allmetal Weatherstrip Co 229 W Ohio Chgo Ill
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Columbus Brass Mfg Co 620 Dublin Av Columbus 16 Ohio
P & F Corbin New Britain Conn
Frantz Mfg Co Sterling Ill (push only) p.410
Kentucky Metal Prods Co Inc Louisville Ky
Macklanburg - Duncan Co Oklahoma City Okla p.157-262
McKinney Mfg Co Pittsburgh Pa p.229
Natl Brass Co Grand Rapids Mich
Peabody-Acker Inc 5816 Hooper Av Los Angeles Calif
Pittsburgh Plate Glass Co 2121-S Grant Bldg Pittsburgh 19 Pa p.267
Reading Hdwe Corp 6th & Willow Sts Reading Pa
Russell & Erwin Div The American Hardware Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Shelby Metal Prods Co Shelby O

PLUMBING FIXTURES

Abingdon Potteries Inc Abingdon Ill
American Radiator & Standard Sanitary Corp Pittsburgh 22 Pa
Bethlehem Industrial Corp 320 E 39th St New York 16 N Y
Briggs Mfg Co Detroit Mich
W A Case & Son Mfg Buffalo N Y
Crane Company 836 S Michigan Av Chgo Ill
Eljer Co Ford City Pa
General Ceramics Co Sanitary Ware Div Metuchen N J
A Y McDonald Mfg Co Dubuque Iowa
Richmond Radiator Co 19 E 47th St N Y 17 N Y
H B Salter Mfg Co Marysville Ohio
Speakman Co 30th & Spruce Wilmington 99 Dela
Universal Sanitary Mfg Co New Castle Pa

PLYWOOD—douglas fir

Aberdeen Plywood Corp Aberdeen Wash p.52
Aetna Plywood & Veneer Co 1732 Elston Chgo Ill p.11
Albany Plywood Co Albany 4 N Y
Am-Mex Sales Co Inc 28 Church Buffalo 2 N Y
Anacortes Veneer Inc Anacortes Wash
Associated Plywood Mills Eugene Oregon p.64
Bellingham Plywood Corp Bellingham Wash
T C Blick Plywood Co Inc 363 Park Av East Hartford Conn
Buffelen Lbr & Mfg Co Tacoma Wash
Cole Mfg Co PO Box 2657 Memphis 2 Tenn p.192
Davis Plywood Corp Cleveland 11 Ohio
Douglas Fir Plywood Assn Tacoma 2 Wash p.51
Dyke Associates Inc Little Rock Ark p.192
Elliott Bay Mill Co Seattle Wash
Engineered Plywood Products Co P O Box 1326 Tacoma Wash
Eugene Plywood Co P O Box 672 Eugene Ore
Fiddes Moore & Co 228 N LaSalle St Chicago Ill p.56
Georgia-Pacific Plywood & Lbr Co Augusta Ga p.40-41
Harbor Plywood Corp Hoquiam Wash p.21-24
Heidner & Co Tacoma 1 Wash p.83
Indianapolis Plywood Co 1300 Beecher St Indianapolis 7 Ind p.60
J-W Plywood Co 9 S Clinton St Chicago 6 Ill
Kochton Plywood & Veneer 509 W Roosevelt Rd Chicago 7 Ill
M & M Wood Working Co Resnpreat Div 2301 N Columbia Portland 3 Ore
Mauk Seattle Lbr Co Skinner Bldg Seattle 1 Wash p.81
Midland Bldg Industries Inc Indianapolis 6 Ind
Millwork Distributors Co 2 N Kresson St Baltimore 24 Md p.188
Niagara Plywood Co 7 Seneca St Buffalo 3 N Y
North Plywood Inc 1425 Fourth Av Seattle 1 Wash
Oregon Plywood Corp Sweet Home Ore
Oregon-Washington Plywood Co Tacoma 2 Wash
Pacific Mutual Door Co Plywood Division Tacoma Wash
Pacific Plywood Corp Willamina Ore
Frank Paxton Lbr Co Kansas City Kansas
Peninsula Plywood Corp Port Angeles Wash
Plywood Inc 4445 Bellevue Av Detroit 7 Mich
Puget Sound Plywood Inc Tacoma Wash p.55
Robinson Mfg Everett Wash
Scranton Plywood Co 45 Elizabeth St Forty Fort Pa
Geo J Silbernagel S S Michigan Av Chicago Ill p.31
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
Springfield Plywood Co Springfield Ore
United States Plywood Corp 55 W 44th New York 18 N Y p.13, 181, 220, 257
Vancouver Plywood & Veneer Co Vancouver Wash
Walton Plywood Co Everett Wash
Washington Veneer Co Olympia Wash
West Coast Plywood Co Aberdeen Wash p.58
Western Door & Plywood Corp Portland Ore
The Wheeler Osgood Co 1216 St Paul Av Tacoma 1 Wash p.141
Williams Plywood Co 222 Chamber of Commerce Bldg Indianapolis Ind p.76

PLYWOOD—douglas fir exterior

Aberdeen Plywood Corp Aberdeen Wash p.52
Aetna Plywood & Veneer Co 1732 Elston Av Chgo Ill p.11
Albany Plywood Co Albany 4 N Y
Associated Plywood Mills Eugene Oregon p.64
Bellingham Plywood Corp Bellingham Wash
Buffelen Lbr & Mfg Co Tacoma Wash
Cook County Lbr Co 130th at Indiana Av Chgo 28 Ill p.69
Davis Plywood Corp Cleveland 11 Ohio
Engineers Plywood Products Co P O Box 1326 Tacoma Wash
Eugene Plywood Co P O Box 672 Eugene Ore
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Georgia-Pacific Plywood & Lbr Co Augusta Ga p.40-41
Harbor Plywood Corp Hoquiam Wash p.21-24
Heidner & Co Tacoma 1 Wash p.83
Indianapolis Plywood Co 1300 Beecher St Indianapolis 7 Ind p.60
J-W Plywood Co 9 S Clinton St Chicago 6 Ill
Kochton Plywood & Veneer 509 W Roosevelt Rd Chicago 7 Ill
M & M Wood Working Co Resnpreat Div 2301 N Columbia Portland 3 Ore
Mauk Seattle Lbr Co Skinner Bldg Seattle 1 Wash p.81
The Mengel Co Inc Louisville 1 Ky p.13-181
Midwest Jobbers Inc 3300-3308 S Racine Av Chgo 8 Ill p.69
Millwork Distributors Co 2 N Kresson St Baltimore 24 Md p.188
Niagara Plywood Co 7 Seneca St Buffalo 3 N Y
North Plywood Inc 1425 Fourth Av Seattle 1 Wash
Northwest Door & Plywood Sales Tacoma 1 Wash
Oregon Plywood Corp Sweet Home Ore
Pacific Mutual Door Co Plywood Div Tacoma 1 Wash
Peninsula Plywood Corp Port Angeles Wash
Puget Sound Plywood Inc Tacoma Wash p.55
Robinson Mfg Co Everett Wash
Geo J Silbernagel S S Michigan Av Chicago 3 Ill p.31
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
United States Plywood Corp 55 W 44th New York 18 N Y p.13, 181, 220, 257
Washington Veneer Co Olympia Wash
West Coast Plywood Co Aberdeen Wash p.58
The Wheeler Osgood Co 1216 St Paul Av Tacoma 1 Wash p.141
Williams Plywood Co 222 Chamber of Commerce Bldg Indianapolis Ind p.76
Wisconsin Laminating Co Chilton Wis p.194

PLYWOOD—fabric covered

Davis Plywood Corp Cleveland 11 Ohio
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
J-W Plywood Co 9 S Clinton St Chicago 6 Ill
M & M Wood Working Co Resnpreat Div 2301 N Columbia Portland 3 Ore
Northwest Door & Plywood Sales Tacoma 1 Wash

PLYWOOD—hardwood

Aetna Plywood & Veneer Co 1732 Elston Av Chgo Ill p.11
Albany Plywood Co Albany 4 N Y
American Plywood Corp New London Wis p.198
Anderson-Tully Co Memphis Tenn
T C Blick Plywood Co Inc 363 Park Av East Hartford Conn
Darlington Veneer Co Inc Darlington S C
Davis Plywood Corp Cleveland 11 Ohio
Daystrom Laminates Inc Daystrom N C
Dixie Lbr Co Inc 8201 Fig St New Orleans La
Fiddes Moore & Co 228 N La Salle St Chicago Ill p.56
General Plywood Corp Louisville 12 Ky
Georgia-Pacific Plywood & Lbr Co Augusta Ga p.40-41
Haskelite Mfg Co Grand Rapids Mich
B M Heede Inc 80 Broad St NY NY p.79
Higgins Inc New Orleans La p.317
Hoosier Panel Co New Albany Ind
Indiana Veneer & Panel Co New Albany Ind
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Ipik Plywood Co Kenner La p.190
J-W Plywood Co 9 S Clinton St Chicago 6 Ill
Jamestown Veneer & Plywood Corp Jamestown N Y
Kochton Plywood & Veneer 509 W Roosevelt Rd Chicago 7 Ill
M & M Wood Working Co Resnpreat Div 2301 N Columbia Portland 3 Ore
The Mengel Co Inc Louisville 1 Ky p.13, 181
Midland Bldg Industries Inc 907 E Michigan St Indianapolis 6 Ind
Millwork Distributors Co 2 N Kresson St Baltimore 24 Md p.188
Niagara Plywood Co 7 Seneca St Buffalo 3 N Y

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North Plywood Inc 1425 Fourth Av Seattle 1 Wash
Northern Hdw Veneers Inc Butternut Wis
Northwest Door & Plywood **Sales Tacoma 1 Wash**
Frank Paxton Lbr Co Kansas City Kansas
Pearl City Plywood Co Inc Jamestown NY
Pluswood Inc Oshkosh Wis
Plywood Inc 4445 Bellevue Av Detroit 7 Mich
Roddis Plywood Corp Marshfield Wis p.68
Scranton Plywood Co 45 Elizabeth St Forty Fort Pa
Underwood Veneer Co Wausau Wis
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
United States Plywood Corp 55 W 44th New York 18 N Y p.13, 188, 220, 257
Weber Veneer & Plywood Co Shawano Wis
The Wheeler Osgood Co 1216 St Paul Av Tacoma 1 Wash p.141
Wisconsin Laminating Co Chilton Wis p.194
Wisconsin Timber & Land Co Sheboygan Wis
Youngstown Plywood Co 1028 West Rayen Av Youngstown Ohio

PLYWOOD—marine

Aetna Plywood & Veneer Co 1732 Elston Av Chicago 22 Ill p.11
American Plywood Corp New London Wis p.198
Davis Plywood Corp Cleveland 11 Ohio
Eugene Plywood Co P O Box 672 Eugene Ore
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Haskelite Mfg Co Grand Rapids 2 Mich
Harbor Plywood Corp Hoquiam Wash p.21-24
Higgins Inc New Orleans La p.317
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Ipik Plywood Co Kenner La p.190
M & M Wood Working Co Resnprest Div 2301 N Columbia Portland 3 Ore
The Mengel Co Inc Louisville 1 Ky p.13, 181
Northwest Door & Plywood Sales Tacoma 1 Wash
Oregon Plywood Corp Sweet Home Oregon
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
United States Plywood Corp 55 W 44th New York 18 N Y p.13, 181, 220, 257

PLYWOOD—pine

Aetna Plywood & Veneer Co 1372 Elston Av Chgo 22 Ill p.11
Cook County Lbr Co 130th at Indiana Av Chgo 28 Ill p.69
Fiddes Moore & Co 228 N La Salle St Chicago Ill p.56
Harbor Plywood Corp Hoquiam Wash p.21-24
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
J-W Plywood Co 9 S Clinton St Chicago 6 Ill
Kochton Plywood & Veneer 509 W Roosevelt Rd Chicago 7 Ill
Long-Bell Lumber Co R A Long Bldg Kansas City 6 Mo & Longview Wash
The Mengel Co Inc Louisville 1 Ky p.13, 181
Mid West Jobbers Inc 3300-3308 S Racine Av Chgo 8 Ill p.69
Natl Plywoods Inc 2710 S Throop Chgo Ill
Pacific Mutual Door Co Plywood Division Tacoma 1 Wash
Geo J. Sibernagel S S Michigan Av Chicago 3 Ill p.31
Tarter Webster & Johnson Inc P O Box 1731 Stockton Calif p.73
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
United States Plywood Corp 55 W 44th New York 18 N Y p.13, 181, 220, 257
Williams Plywood Co 222 Chamber of Commerce Bldg Indianapolis Ind p.76

PLYWOOD—plastic faced

Aetna Plywood & Veneer Co 1732 Elston Av Chicago 22 Ill p.11
Buffelen Lbr & Mfg Co Tacoma Wash
Davis Plywood Corp Cleveland 11 Ohio
Fiddes-Moore & Co 205 W Wacker Drive Chgo Ill p.56
Formica Insulation Co 4501 Spring Grove Av Cincinnati 32 Ohio
Harbor Plywood Corp Hoquiam Wash p.21-24
Higgins Inc New Orleans La p.317
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Kochton Plywood & Veneer Co Inc 509 W Roosevelt Rd Chgo 7 Ill
M & M Wood Working Co Resnprest Div 2301 N Columbia Portland 3 Ore
The Mengel Co Inc Louisville 1 Ky p.13, 181
Northwest Door & Plywood Sales Tacoma 1 Wash
Pearl City Plywood Co Inc Jamestown NY
Simpson Logging Co Seattle Wash
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
U S Plywood Corp 55 W 44th St NY 18 NY p.13, 181, 220, 257
The Wheeler Osgood Co 1216 St Paul Av Tacoma 1 Wash p.141

PLYWOOD SEALER

Aetna Plywood & Veneer Co 1732 Elston Av Chicago 22 Ill p.11
Breinig Bros Inc Hoboken N J
Ceraseal Chemical Corp 221 N La Salle St Chicago 1 Ill
Fiddes-Moore & Co. 205 W Wacker Dr Chgo Ill p.56
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
I F Laucks Inc Seattle 4 Wash
The Mengel Co Inc Louisville 1 Ky p.13, 181
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
United States Plywood Corp 55 W 44th St New York 18 N Y p.13, 181, 220, 257

POINTS—glazier

Atlas Tack Corp Fairhaven Mass
Fletcher Terry Co South St Forestville Conn p.256, 277, 320
W H Maze Co Peru Ill
Markwell Mfg Co Inc 200 Hudson St New York 13 N Y
National Sheet Metal Co Peru Ill
Red Devil Tools Irvington 11 N J p.10
Toledo Plate & Window Glass Co 1041 Utica St Toledo 2 Ohio

POLISH—floor

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
Boston Varnish Co Boston Mass p.213
Boyle-Midway Inc Jersey City 2 N J p.220
E L Bruce Co Memphis Tenn p.307
Chemical Supply Co 225 Plymouth Bldg Cleveland 15 Ohio
Crescent Products Co Terre Haute Ind
Ensign Products Co Cleveland 5 Ohio
Franklin Research Co Philadelphia 31 Pa
R M Hollingshead Corp Camden N J
Industrial Chemical Laboratories Ltd Omaha 2 Neb
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
O-Cedar Corp 2246 W 49 Chgo Ill
Puritan Chemical Co Atlanta 3 Ga
Sherwin-Williams Co Cleveland O
Simoniz Company 2100 S Indiana Av Chgo Ill
Socony-Vacuum Oil Co 26 Broadway NYC NY
Standard Oil Co of Indiana 910 S Michigan Av Chgo Ill

POLISH—furniture

Boston Varnish Co Boston Mass p.213
Boyle-Midway Inc Jersey City 2 N J p.220
Crescent Products Co Terre Haute Ind
Glidden Co Cleveland O
R M Hollingshead Corp Camden N J
Industrial Chemical Laboratories Ltd Omaha 2 Neb
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
O-Cedar Corp 2246 W 49th Chgo Ill
Puritan Chemical Co Atlanta 3 Ga
Rubon Woodfinishing & Products Co 500 W 7th St Kansas City 6 Mo
Simoniz Company 2100 S Indiana Av Chgo Ill
Socony-Vacuum Oil Co Inc 26 Broadway NY NY

POST HOLE DIGGERS

American Fork & Hoe Co Cleveland 15 Ohio
Ames Baldwin Wyoming Co Parkersburg W Va
Hubbard & Co Pittsburgh Pa
Iwan Bros Inc South Bend Ind
Leetonia Tool Co Leetonia Ohio
Sterling Foundry Co Inc Sterling Ill
Woodings-Verona Tool Works Verona Pa

POSTS—adjustable floor leveling and supporting

Akron Products Co Seville Ohio
Allen Steel Products 12911 Hillview Detroit 27 Mich
Brainard Steel Co Tel-O-Post Div Warren 3 Ohio p.95
Holm's Mfg Co of Ohio 106 N Main Akron 8 Ohio
Perma-Jack Corp Cleveland 11 Ohio
N B Spurgeon Co 20 N Wacker Dr Chicago 6
United Metal Products Inc Akron 11 Ohio

POSTS—steel fence, farm

American Steel & Wire Co U S Steel Corp Sub Rockefeller Bldg Cleveland 13 Ohio p.392
Bethlehem Steel Co Bethlehem Pa
Calumet Steel Co 310 S Michigan Av Chicago Ill
Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Columbia Steel Co Russ Bldg San Francisco 6 Cal p.392
Continental Steel Corp Kokomo Ind p.395
Dare Products Inc Dept AL 66 E Jackson St Battle Creek Mich (Elec fence posts)
Keystone Steel & Wire Co Peoria 1 Ill p.397
Mid-States Steel & Wire Co Crawfordsville Ind
Nichols Wire & Aluminum Co Davenport Ia
Northwestern Steel & Wire Co Sterling Ill
Republic Steel Corp Republic Bldg Cleveland 1 Ohio
Tennessee Coal Iron & RR Co U S Steel Corp Sub Birmingham 2 Ala p.392

POSTS—wood

Colfax Lbr & Creosoting Co Colfax La
Crossett Lbr Co Crossett Ark
Frost Lumber Industries Shreveport La
Idaho Pole Co Sandpoint Idaho
Long-Bell Lbr Co Kansas City Mo and Longview Wash
L D MacFarland Co Ltd Sandpoint Idaho
MacGillis & Gibbs Co 324 E Wisconsin Av Milwaukee 2 Wis
T R Miller Mill Co Brewton Ala
National Pole & Treating Div Minnesota & Ontario Paper Co 500 Arcade Bldg Minneapolis 2 Minn
Nebr Bridge Sup & Lbr Co Omaha Nebr
Republic Creosoting Co Merchants Bank Bldg Indianapolis 4 Ind
Wood Products Co 421 Phillips Av Toledo 12 Ohio

POULTRY EQUIPMENT

Brower Mfg Co Quincy Ill
Clay Equip Corp Cedar Falls Ia
H D Hudson Mfg Co Dept D-16 589 E Illinois Chgo 11 Ill
James Mfg Co Fort Atkinson Wis
Nichols Wire & Aluminum Co Davenport Ia
Oakes Mfg Co Inc Tipton Ind

POULTRY HOUSES

Celotex Corp 120 S La Salle Chgo 3 Ill p.297, 329, 369, 439
James Mfg Co Fort Atkinson Wis
Rilco Laminated Products Inc 2680 First Natl Bank Bldg St Paul 1 Minn p.38
Super-Structures Inc Albert Lea Minn

POWER UNITS

Caterpillar Tractor Co Peoria 8 Ill
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
International Harvester Co 180 N Michigan Av Chgo 1 Ill
The Ready-Power Co 3820 Grand River Av Detroit Mich
Sterling Foundry Co Inc Sterling Ill

PREFABRICATED CHIMNEYS

Condensation Engineering Corp 122 S Michigan Av Chgo 3 Ill
H W Covert Co 339 E 48th St NY 17 NY
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Van Packer Corp 134 S Clark Chgo Ill p.391

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PREFABRICATED FARM BUILDINGS

Clayton & Lambert Mfg Co 1701 Dixie Highway Louisville 10 Ky (steel)
Crawford Corp Baton Rouge 1 La
Factory Built Homes Inc McDonough N Y
GBH-Way Homes Inc Dept AD Walnut Ill (brooder & laying houses, hog houses) p.415
Green Lumber Co Laurel Miss
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Houston Ready-Cut House Co Houston 1 Tex
James Mfg Co Ft Atkinson Wis
Precision-Built Homes Corp Trenton N J
Starline Inc Harvard Ill
Steelcraft Mfg Co 9050 Blue Ash Rossmoyne Ohio
Super-Structures Inc Albert Lea Minn
The Strathmoor Co 14000 Grand River Av Detroit 27 Mich
Texas Housing Co Inc 9003 Denton Dr Dallas 9 Texas
Timber Structures Inc Portland 8 Ore
U S-Challenge Co 38 S Dearborn Chgo 3 Ill

PREFABRICATED GARAGES

Adirondack Log Cabin Co Inc 222 E 46th St New York 17 N Y
Crawford Corp Baton Rouge 1 La
GBH-Way Homes Inc Dept AD Walnut Ill p.415
Ivon R Ford Inc McDonough N Y
The Green Lumber Co Laurel Miss
Pre-Fab Industries 1601 Main St South Bend 23 Ind
Soule Steel Co 1750 Army St San Francisco 24 Cal
Southern Mill & Mfg Co P O Box 1087 Tulsa 1 Okla
Steelcraft Mfg Co 9050 Blue Ash Rd Rossmoyne Ohio
The Strathmoor Co 14000 Grand River Av Detroit 27 Mich
Super-Structures Inc Albert Lea Minn
Texas Housing Co Inc 9003 Denton Dr Dallas 9 Texas
United States Prefab Corp 224 E 46th St New York 17 N Y
U S-Challenge Co 38 S Dearborn Chgo 3 Ill

PREFABRICATED HOUSES

Adirondock Log Cabin Co 222 E 46th St New York 17 N Y
Allied Housing Associates Inc Langhorne Pa
American Houses Inc 165 W 46th St New York 19 N Y
Anchorage Homes Inc Westfield Mass
Century Pre-fab Corp Haddon Heights N J
Crawford Corp Baton Rouge 1 La
Factory Built Homes Inc McDonough N Y
Fuller Houses Inc Wichita Kan
GBH-Way Homes Inc Dept AD Walnut Ill p.415
General Houses Inc 400 W Madison Chgo Ill
Green Lumber Co Laurel Miss
Gunnison Homes Inc New Albany Ind
Home Bldg Corp Kansas City Mo
Home-Ola Corp 2542 Elston Av Chicago 47 Ill
Hoosier Homes Inc 633 E 38th St Indianapolis Ind (pre-cut) p.412
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Houston Ready-Cut House Co Houston 1 Tex
Indiana Demountable Housing Inc 907 E Michigan St Indianapolis 6 Ind
Johnson Housing Corp Sharon Pa
Knox Corp Thomson Ga
National Homes Corp of Indiana 52 By Pass Lafayette Ind
Plywood Structures Inc Los Angeles Cal
Precision-Built Homes Corp Trenton N J
Pre-Fab Industries 1601 Main St South Bend 23 Ind
Reynolds Metals Co Bldg Products Div Louisville 1 Ky p.93
Shelter Industries Inc 630 Fifth Av New York 20 N Y
Soule Steel Co 1750 Army St San Francisco 24 Cal
Southern Mill & Mfg Co Tulsa Okla
Southern States Iron Roofing Co Savannah Ga
Steelcraft Mfg Co 9050 Blue Ash Rd Rossmoyne Ohio
The Strathmoor Co 14000 Grand River Av Detroit 27 Mich
Super-Structures Inc Albert Lea Minn
Texas Housing Co Inc 9003 Denton Dr Dallas 9 Texas
United States Prefab Corp 225 E 46th St New York 17 N Y
U S-Challenge Co 38 S Dearborn Chgo 3 Ill
N K Winston Associates 22 W 48th St New York N Y

PRESERVATIVE—awning, tarpaulin, rope

American Tent & Awning Co 1132 Mission St San Francisco 3 Cal
Cer-A-Seal Chemical Corp 221 N La Salle St Chicago 1 Ill
Cuprinol Div Darworth Inc 53 Maple St Simsbury Conn p.79
Devoe & Raynolds Co Inc Dept A-5 787 First Av N Y 17 N Y p.207
The Dow Chemical Co Midland Mich
Ensign Products Co Cleveland 5 Ohio
Fulton Bag & Cotton Mills Atlanta 1 Ga
Grasselli Chemical Dept E I du Pont de Nemours & Co Inc Wilmington 98 Del
Haynes Products Co 4007 Farnum St Omaha 3 Neb
H B Fred Kuhls 6413 Third Av Brooklyn N Y
Mobile Paint Mfg Co Mobile 9 Ala
Monsanto Chemical Co 1700 S Second St Louis 4 Mo
Osmose Wood Preserving Co 1437 Bailey Av Buffalo 12 N Y
Pennsylvania Salt Mfg Co Philadelphia 7 Pa
Perma Products Co Cleveland 4 Ohio p.327
Protection Products Mfg Co Kalamazoo 99 Mich p.64
Quigley Co Inc 527 5th Av NY 17 NY
Ranetite Mfg Co Inc 1917 S Broadway St Louis Mo
Standard Industrial Products Inc Box 325 Evansville 4 Ind
The Sullivan Co P O Box 2606 Memphis 2 Tenn
Vita-Var Corp 46 Albert St Newark 2 N J
Weather Seal Co 10 E Pearl St Cincinnati 2 Ohio

PRESERVATIVE—wood

Abesto Mfg Corp Dept D3 Michigan City Ind p.354
Aetna Plywood & Veneer Co 1732 Elston Av Chgo 22 Ill p.11
Barrett Div Allied Chemical & Dye Corp 40 Rector N Y 6 N Y p.351
Breinig Bros Inc Hoboken N J
Samuel Cabot Inc 2346 Oliver Bldg Boston 9 Mass
Carbolineum Wood Preserving Co 508 W Highland Av Milwaukee 3 Wis
Chapman Chemical Co 181 W Mallory Memphis Tenn
Cre-O-Tox Chem Co Memphis Tenn
Cuprinol Div Darworth Inc 53 Maple St Simsbury Conn p.79
Devoe & Raynolds Co Inc Dept A-5 787 First Av N Y 17 N Y p.207
The Dow Chemical Co Midland Mich
E I du Pont de Nemours & Co Inc Wilmington 98 Del
Forman Ford & Co 111 S 2nd Minneapolis 1 Minn
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland 2 Ohio
Geo C Gordon Chemical Co Kansas City 7 Mo
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Koppers Co Inc Tar Products Div Pittsburgh 19 Pa
Lowe Bros Co Dayton 2 Ohio p.217
Monsanto Chemical Co St Louis Mo
Paraffine Companies Inc 475 Brannan Av San Francisco 19 Calif
Ira Parker & Sons Co Oshkosh Wis p.68
Perma Products Co Cleveland 4 Ohio p.327
Protection Products Mfg Co Kalamazoo 99 Mich p.64
Protexol Corp 104 Market St Kenilworth 4 N J p.85
Reilly Tar & Chemical Corp 1615 Merchants Bank Bldg Indianapolis 4 Ind
Republic Creosoting Co Merchants Bank Bldg Indianapolis 4 Ind
Rockford Paint Mfg Co N Madison at Market St Rockford Ill
The Sargent-Gerke Co Indianapolis 6 Ind
L Sonneborn Sons Inc 88 Lexington Av NY 16 NY
Standard Industrial Products Inc Box 325 Evansville 4 Ind
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Sullivan Co P O Box 2606 Memphis 2 Tenn
Vaccinol Sales Co 3914 E Broadway N Little Rock Ark
West Coast Stained Shingle Co 1118 Leary Way Seattle Wash
Wood Treating Chemicals Co 5137 Southwest Av St Louis Mo

PREVENTIVES—sap stain

Abesto Mfg Corp Dept D3 Michigan City Ind p.354
Breinig Bros Inc Hoboken N J
Chapman Chemical Co 181 W Mallory Memphis Tenn
Dow Chemical Co Midland Mich
E I du Pont de Nemours & Co Inc Wilmington 98 Del
Forman Ford & Co 111 S 2nd St Minneapolis 1 Minn
Monsanto Chemical Co St Louis Mo
Protection Products Mfg Co Kalamazoo 99 Mich p.64
Wyandotte Chemical Corp Wyandotte Mich

PREVENTIVES—wood check

Abesto Mfg Corp Dept D3 Michigan City Ind p.354
Aetna Plywood & Veneer Co 1732 Elston Av Chicago 22 Ill p.11
The Akron Paint and Varnish Co Dept AL Akron 1 Ohio
Breinig Bros Inc Hoboken N J
E L Bruce Co Memphis Tenn p.307
Chapman Chemical Co 181 W Mallory Memphis Tenn
Cre-O-Tox Chem Co Memphis Tenn
Forman Ford & Co 111 S 2nd St Minneapolis 1 Minn
Mobile Paint Mfg Co Mobile 9 Ala
Osmose Wood Preserving Co 1437 Bailey Av Buffalo 12 N Y
Protection Products Mfg Co Kalamazoo 99 Mich p.64
The Ruberoid Co 500 Fifth Av N Y 18 N Y p.349
The Sullivan Co PO Box 2606 Memphis 2 Tenn

PRESSES—veneer, hydraulic

American Mfg Co Inc Tacoma 2 Wash
Black Bros Co Inc Mendota Ill
Dunning & Boschert Press Co Inc Syracuse N Y
A B Farquhar Co York Pa
Chas E Francis Co Huntington Ind
Handy Mfg Co 2432 W Lawrence Chgo 25 Ill
Hydraulic Press Mfg Co Mount Gilead O
Merritt-Monsanto Corp Lockport N Y
R D Wood Co Philadelphia 5 Pa

PRICE CARDS—holders, mouldings

Ames Metal Moulding Co Inc 227 E 144th St New York 7 N Y
H A Dunning Westerly R I
L F Grammes & Sons Inc 396 Union Allentown Pa
Hampden Mfg Co Plainfield N J
W C Heller & Co Cat #40A 1050 Bryant St Monpelier Ohio p.468
Hopp Press Inc 460 W 34 NY NY
Johnswood Co 13833 S Indiana Av Chgo 27
Knape & Vogt Mfg Co 658 Richmond St N W Grand Rapids 4 Mich
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157, 262
Marsh Wall Products Inc 441 Main St Dover Ohio p.283
Meilicke Systems Inc 3458-60 N Clark Chgo 13 Ill
Reflector Hdwe Corp Western Av & 22nd Pl Chgo Ill
F M Zimmerman Aurora Ill

PUBLICATIONS

American Home Magazine Corp 444 Madison Av NY 22 NY
Country Gentleman Independence Sq Philadelphia 5 Pa p.495

PULLS—cabinet & drawer

Akron Hdwe Mfg Corp 3616 33rd St Long Island City 1 N Y
American Brass Goods Co Grand Rapids 2 Mich
American Cabinet Hdwe Corp Dept 1-AP Rockford Ill p.227
Barrows Lock Works 24th & Commonwealth Av North Chicago Ill
R F Cooke Mfg Co Orange Mass
P & F Corbin New Britain Conn

Number after listing indicates page on which advertisement appears

L F Grammes & Sons Inc Allentown Pa
Gregg & Son 25 Crown St Nashua N H p.158-159
H B Ives Co New Haven 8 Conn
F D Kees Mfg Co Beatrice Neb
Lawrence Bros Sterling Ill
McKinney Mfg Co Pittsburgh Pa p.229
Modern Plastic Co Los Angeles 11 Calif
National Lock Co Rockford Ill p.237
National Mfg Co Sterling Ill
Peabody-Acker Inc 5816 Hooper Av Los Angeles Calif
Phoenix Lock Co Newark 7 N J
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sager Lock Works North Chicago Ill
Sargent & Co PO Box 1940 New Haven 9 Conn
Duncan Shaw Corp 33 W 42nd St NY 18 N Y
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Standard Bronze Co Bayonne 8 N J p.255
The Stanley Wks New Britain Conn p.253
Technical Glass Co Inc 2050 E 48th St Los Angeles 11 Calif

PULLS—door

American Cabinet Hdwe Corp Dept 1-AP Rockford Ill p.227
Barrows Lock Wks 24th & Commonwealth Av North Chicago Ill
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Columbus Brass Mfg Co 620 Dublin Av Columbus 16 Ohio
P & F Corbin New Britain Conn
H B Ives Co New Haven 8 Conn
F D Kees Mfg Co Beatrice Nebr
Lawrence Bros Sterling Ill
McKinney Mfg Co Pittsburgh Pa p.229
National Brass Co Grand Rapids Mich
National Mfg Co Sterling Ill
Peabody-Acker Inc 5816 Hooper Av Los Angeles Calif
Phenix Mfg Co 4129 N Port Washington Rd Milwaukee 12 Wis p.411
Phoenix Lock Co Newark 7 N J
Richards-Wilcox Co Aurora Ill p.249
Russell & Erwin Div The American Hdwe Corp New Britain Conn p.241
Safe Padlock & Hdwe Co Lancaster Pa
Sager Lock Works North Chicago Ill
Sargent & Co P O Box 1940 New Haven 9 Conn
Segal Lock & Hdwe Co Inc 395 Broadway NY 13 N Y
Sharon Hdwe Mfg Co Sharon Pa
Duncan Shaw Corp 33 W 42nd St NY 18 NY
Slaymaker Lock Co Cat 376A Lancaster Pa p.252
Standard Bronze Co Bayonne 8 N J p.255
The Stanley Wks New Britain Conn p.253
Technical Glass Co Inc 2050 E 48th St Los Angeles 11 Calif
Yale & Towne Mfg Co Stamford Conn p.222, 604

PUMPS—centrifugal

Allis-Chalmers Mfg Co Milwaukee 1 Wis p.484
Aurora Pump Co 619 Loucks St Aurora Ill
Economy Pumps Inc Div of Hamilton Thomas Corp Hamilton O
Marlow Pumps 519 Greenwood Av Ridgewood N J (self priming)

PUMPS—hand

Aermotor Co 2500 W Roosevelt Rd Chgo Ill
Armstrong Products Corp Huntington 12 W Va
Baker Mfg Co Evansville Wis
Butler Co Butler Ind
Deming Co Salem O
Dempster Mill Mfg Co Beatrice Neb
Flint & Walling Mfg Co Inc Kendallville Ind
A Y McDonald Mfg Co P O Box 508 Dubuque Iowa
F E Myers & Bro Co Ashland O
Red Cross Mfg Co Bluffton Ind
Red Jacket Mfg Co Davenport Ia
Wayne Agricultural Works Inc Goldsboro N C

PUMPS—sump

American Well Wks Aurora Ill
Aurora Pump Co 619 Loucks St Aurora Ill
Chicago Pump Co 2336 W Wolfram Chgo Ill
Construction Machinery Co Waterloo Iowa
The Dayton Pump & Mfg Co 500 N Webster St Dayton 1 Ohio
Deming Co Salem O
Dempster Mill Mfg Co Beatrice Neb
Economy Pumps Inc Div of Hamilton-Thomas Corp Hamilton O
Fairbanks Morse & Co 600 S Michigan Av Chgo Ill
Flint & Walling Mfg Co Inc Kendallville Ind
Goulds Pumps Inc Seneca Falls N Y
A Y McDonald Mfg Co Box 508 Dubuque Iowa
Marlow Pumps 519 Greenwood Av Ridgewood N J (self priming centrifugal)
F E Myers & Bro Ashland O
M Shetler & Sons Co Clio Mich
Worthington Pump & Mchry Corp Harrison N J

PUMPS—suction

C H & E Mfg Co 3849 N Palmer St Milwaukee 12 Wis
Chicago Pump Co 2336 W Wolfram Chgo Ill
The Dayton Pump & Mfg Co 500 N Webster St Dayton 1 Ohio
Flint & Walling Mfg Co Inc Kendallville Ind
Gardner Denver Co Quincy Ill
General Detroit Corp 2272 E Jefferson Av Detroit 7 Mich
Homelite Corp Port Chester N Y
A Y McDonald Mfg Co Box 508 Dubuque Iowa

PUMPS—water supply system

Aurora Pump Co 619 Loucks St Aurora Ill
Baker Mfg Co Evansville Wis
Chicago Pump Co 2336 W Wolfram Chgo Ill
Construction Machinery Co Waterloo Ia
The Dayton Pump & Mfg Co 500 N Webster Dayton 1 Ohio
Decatur Pump Co Decatur Ill
Delco Appliance Div Gen'l Motor Sales Rochester N Y
Deming Co Salem O
Dempster Mill Mfg Co Beatrice Neb
Economy Pumps Inc Div of Hamilton-Thomas Corp Hamilton Ohio
Erie Pump & Engine Works Medina N Y
The Everite Pump & Mfg Co Inc 617-19 N Price St Lancaster Pa
Fairbanks Morse & Co 600 S Michigan Av Chgo Ill
Flint & Walling Mfg Co Kendallville Ind
Gardner Denver Co Quincy Ill
Goulds Pumps Inc Seneca Falls N Y
Heil Co Milwaukee 1 Wis
A Y McDonald Mfg Co P O Box 508 Dubuque Iowa
F E Myers & Bro Co Ashland O
Novo Engine Co Lansing 5 Mich
Pioneer Gen-E-Motor Corporation 5841 W Dickens Chgo 39 Ill
Red Jacket Mfg Co Davenport Ia
M Shetler & Sons Co Clio Mich
Worthington Pump & Mchry Corp Harrison N J

PUMPS—windmill

Aermotor Co 2500 Roosevelt Rd Chgo Ill
Baker Mfg Co Evansville Wis
Deming Co Salem O
Dempster Mill Mfg Co Beatrice Neb
Fairbanks Morse & Co 600 S Michigan Av Chgo 5 Ill
Flint & Walling Mfg Co Inc Kendallville Ind
A Y McDonald Mfg Co P O Box 508 Dubuque Iowa
F E Myers & Bro Co Ashland O
Red Jacket Mfg Co Davenport Ia

PUNCHES—center prick

American Swiss File & Tool Elizabeth N J
Baltimore Tool Works Baltimore 30 Md
Bridgeport Hdwe Mfg Corp Bridgeport Conn
Cincinnati Tool Co Norwood Cincinnati 12 Ohio
Crescent Tool Co Jamestown N Y
Damascus Steel Prod Corp Rockford Ill
Fairmount Tool & Forging Co Cleveland 6 Ohio
Hubbard & Co 6301 Butler St Pittsburgh 1 Pa
Kraeuter & Co Inc Newark N J
Mayhew Steel Products Inc Shelburne Falls Mass
Mephisto Tool Co Inc Hudson NY
Millers Falls Co Greenfield Mass
P & C Hand Forged Tool Co Portland 2 Ore
Plomb Tool Co 2209 Santa Fe Av Los Angeles 54 Calif
Rainey-Tools Grove City Pa
The Stanley Wks New Britain Conn p.253
Trimble & Fink Mfg Co Inc Baltimore 1 Md
Union Tool Co Orange Mass
Vaughan & Bushnell Mfg Co 135 S La-Salle Chgo Ill
Vichek Tool Co Cleveland O
Wilde Drop Forge & Tool Co Kansas City 8 Mo

PURCHASING SERVICE

Biddle Purchasing Co 280 Broadway N Y N Y p.73

PUSHERS—snow

American Fork & Hoe Co Cleveland O
Ames Baldwin Wyoming Co Parkersburg W Va
Farwell Ozmun Kirk & Co St Paul 1 Minn
Owosso Mfg Co Owosso Mich
Rugg Mfg Co Greenfield Mass
Wirt & Knox Mfg Co Philadelphia 32 Pa
Yeoman-Hoag Co Monticello Ia

PUTTY

Armstrong Co 4063 S La Salle Chgo 9 Ill p.277
Biddle Co 612 S Main St St Louis 2 Mo p.191
Boyle-Midway Inc Jersey City 2 N J p.220
Briggs Maroney Co Inc Everett Mass
Devoe & Raynolds Co Inc Dept A-5 787 First Av N Y 17 N Y p.207
Dicks-Pontius Co 123 Wayne St Dayton O
Farwell Ozmun Kirk & Co St Paul 1 Minn
Felton Sibley & Co Inc 136 N 4th Philadelphia 6 Pa
Forman Ford & Co 111 S 2nd St Minneapolis 1 Minn
Fort Pitt Chem Co 26th & Smallman St Pittsburgh 22 Pa
W P Fuller & Co 301 Mission San Francisco 19 Cal
The Glidden Co 11001 Madison Av Cleveland 2 Ohio
Gumputtie Laboratories 2221 S Archer Av Chicago 16 Ill
Landen Putty Works Malden 48 Mass
The Las-Stik Mfg Co B & Wayne sts Hamilton Ohio
Mar-Kay Mfg Co 2715 S Second St St Louis Mo
Ira Parker & Sons Co Oshkosh Wis p.70
Pecora Paint Co American & Venango Philadelphia 40 Pa
Plastic Prod Co 6475 Georgia Av Detroit 11 Mich
Savogran Co Boston 10 Mass
Schalk Chem Co Los Angeles 12 Cal
Steelcote Mfg Co 3418 Gratiot St Louis 3 Mo
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449
Toledo Plate & Window Glass Co 1041 Utica St Toledo 2 Ohio
Geo D Wetherill & Co Philadelphia Pa

PUTTY—metal sash

Adams Co Dubuque Ia
Armstrong Co 4063 S La Salle Chgo 9 Ill p.277
Biddle Co 612 S Main St St Louis 2 Mo p.191
Blue Ridge Talc Co Inc Henry Va
Devoe & Raynolds Co Inc Dept A-5 787 First Av N Y 17 N Y p.207
Dicks-Pontius Co 123 Wayne St Dayton O
Felton Sibley & Co Inc 136 N 4th Philadelphia 6 Pa
Forman Ford & Co 111 S 2nd Minneapolis 1 Minn

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Gumputtie Laboratories 2221 S Archer Av Chgo 16 Ill
Fort Pitt Chem Co 26th & Smallman St Pittsburgh 22 Pa
Landen Putty Works Malden 48 Mass
Irp Parker & Sons Co Oshkosh Wis p.68
Pecora Paint Co Philadelphia Pa
Plastic Prod Co 6475 Georgia Av Detroit 11 Mich
Smooth-On Mfg Co 568-574 Communipaw Av Jersey City 4 N J
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449
Toledo Plate & Window Glass Co 1041 Utica St Toledo 2 Ohio

PUTTY—water

Boyle-Midway Inc 257 Cornelison Av Jersey City 2 N J p.220
Donald Durham Co PO Box 804 Des Moines 4 Ia p.221
The Savogran Co 25 Huntington Av Boston 16 Mass
Schalk Chemical Co 351 E Second St Los Angeles 12 Calif
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
The Sullivan Co P O Box 2606 Memphis 2 Tenn
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449

PUTTY SOFTENERS

Fletcher Terry Co South St Forestville Conn p.256, 277, 320
Glaziers Tool Mfg Corp 611 W Adams Chgo Ill
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449

QUICKLIME—pulverized

Kelley Island Lime & Transport Co Cleveland 14 Ohio
Louisville Cement Co Inc 315 Guthrie St Louisville 2 Ky
National Gypsum Co Buffalo 2 N Y p.298-299
Ohio Hydrate — Supply Co Woodville Ohio p.448
Riverton Lime & Stone Co Inc Riverton Va
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

RACKS—clothes

Acme Metal Goods Mfg Co Newark N J
Beh & Co Inc 1150 Broadway New York 1 N Y
Chicago Curtain Stretcher Co 1127 W 37th Chgo 9 Ill
J R Clark Co Spring Park Minn
Gem Mfg Co North Girard Pa
Handy Things Mfg Co Ludington Mich
Michigan Ladder Co Ypsilanti Mich
Moulton Ladder Mfg Co Somerville Mass
Universal Steel Equipment Corp 135 W 23rd NY NY
Winner Industries 1023 Washington Av S Minneapolis 15 Minn

RACKS—fire hose

W D Allen Mfg Co 566 W Lake Chgo Ill
American-La France-Foamite Corp Elmira N Y
Beall Pipe & Tank Corp Portland Ore
Elkhart Brass Mfg Co Inc Elkhart Ind
General Detroit Corp 2272 E Jefferson Detroit 7 Mich
Wirt & Knox Mfg Co Philadelphia 32 Pa

RAFTERS—glued laminated

Rilco Laminated Prod Inc 2680 First Natl Bank Bldg St Paul 1 Minn p.38
Superior-Structures Inc Albert Lea Minn
Tacoma Lumber Fabricating Co Tacoma 1 Wash
Timber Structures Inc Portland 8 Ore
Unit Structures Inc Peshtigo Wis

RAILINGS—porch, stair, stoop

The Andal Mfg Co 122 Ash St Akron 8 Ohio
Cincinnati Iron Fence Co Inc 2110 Florence Av Cincinnati 6 O
R G Coffman Co Inc 2809 N Orange Av Orlando Fla
Columbus Brass Mfg Co 620 Dublin Av Columbus 16 Ohio
Logan Co Inc Louisville 6 Ky (wrought iron)
Metal Crafters Div Castone Products Co Cedar Rapids Ia (wrought iron) p.110
S Parker Hdwe Mfg Co 27 Ludlow St NY 2 NY
F P Smith Wire & Iron Works Inc 2346 N Clybourn Av Chicago 14 Ill
Standard Bronze Co Bayonne 8 N J p.255
Stewart Iron Works Co Inc 1551 Stewart Block Cincinnati 1 Ohio (metal)
Valley Metal Products Marseilles Ill p.135

RANGES—electric

A-B Stoves Div Detroit-Michigan Stove Co Battle Creek Mich
Admiral Corp 3800 W Cortland Chgo 47 Ill
Cavalier Corp Chattanoga Tenn
Crosley Corp Cincinnati O
Crown Stove Wks 4631 W 12th Pl Cicero Ill
Estate Stove Co Hamilton O
Excelsior Stove & Mfg Co Quincy Ill
Florence Stove Co Gardner Mass
Frigidaire Div General Motors Corp Dayton 1 Ohio
General Electric Co Schenectady 5 N Y
Hotpoint Inc 5600 W Taylor St Chicago 44 Ill
Landers Frary & Clark New Britain Conn
Malleable Iron Range Co Beaver Dam Wis
Nash-Kelvinator Corp Detroit Mich
Norge Div Borg Warner Corp 672 Woodbridge St Detroit 26 Mich
Round Oak Co Dowagiac Mich
Westinghouse Electric Corp 306 Fourth Av Pittsburgh 30 Pa p.391

RANGES—gas

A-B Stoves Div Detroit-Michigan Stove Co Battle Creek Mich
The Estate Stove Co Hamilton Ohio
Excelsior Stove & Mfg Co Quincy Ill
Florence Stove Co Gardner Mass
Gray & Dudley Co 2300 Clifton Rd Nashville 3 Tenn
Majestic Mfg Co 4550 Gustine St Louis 16 Mo (gas & coal combination)
Malleable Iron Range Co Beaver Dam Wis
Roberts & Mander Corp Hatboro Pa
Geo D Roper Corp Rockford Ill
Washington Stove Wks PO Box 919 Everett Wash

RANGES—wood & coal

Excelsior Stove & Mfg Co Quincy Ill
Gray & Dudley Co 2300 Clifton Rd Nashville 3 Tenn
Majestic Mfg Co 4550 Gustine St Louis 16 Mo
Washington Stove Wks PO Box 919 Everett Wash

REFRACTORIES—plastic

Acme Brick Co Fort Worth 2 Texas
Chicago Fire Brick Co 1461 N Elston Chgo 22 Ill
Curtis Mfg & Asbestos Co 29 Lewis Wharf Boston 10 Mass
Denver Fire Clay Co Denver Colo
General Refractories Co Philadelphia Pa
A P Green Fire Brick Co Mexico Mo
Harbison Walker Refractories Co Farmers Bank Bldg Pittsburgh Pa
Johns-Manville Corp Box 290 22 E 40th N Y 16 N Y p.280, 301, 347, 375
Laclede-Christy Clay Prods Co St Louis Mo
Mexico Refractories Co Mexico Mo
North American Refractories Co Cleveland 14 Ohio
Norton Co 1 New Bond St Worcester 6 Mass
Plibrico Jointless Firebrick Co 1800 N Kingsbury Chgo 14 Ill
Quigley Co Inc 527 Fifth Av New York 17 N Y
Seaboard Refractories Perth Amboy N J
Walsh Refractories Corp 4070 N First St St Louis 7 Mo
Washington Brick & Lime Co Box 2198 Spokane 8 Wash

REFRIGERATORS—electric

Admiral Corp 3800 W Cortland Chgo 47 Ill
Coolerator Co Box 399 Duluth 1 Minn
Copeland Refrigeration Corp Sidney Ohio
Crosley Corp Cincinnati O
Frigidaire Div General Motors Corp Dayton 1 Ohio
General Electric Co Schenectady 5 N Y
General Refrigerator Corp 678 Broadway New York 12 N Y
Gibson Electric Refrigerator Corp Greenville Mich
Hotpoint Inc 5600 W Taylor St Chicago 44 Ill
Jewett Refrigerator Co Buffalo N Y
McQuay Inc Minneapolis 13 Minn (commercial)
Nash-Kelvinator Corp Detroit Mich
Norge Div Borg Warner Corp 672 E Woodbridge St Detroit 26 Mich
Potter Refrigerator Corp Buffalo N Y
Seeger-Sunbeam Corp St Paul 6 Minn

REFRIGERATORS—gas

Servel Inc Evansville Ind

REGISTERS—heating & ventilating

American Foundry & Furnace Co Bloomington Ill
Auer Register Co Cleveland O
Beh & Co Inc 1150 Broadway New York 1 N Y
Excelsior Stove & Mfg Co Quincy Ill
Forest City Foundries Co Cleveland O
Hart & Cooley Mfg Co Holland Mich
Liberty Foundry Co St Louis Mo
Nichols Wire & Aluminum Co Davenport Ia
S Parker Hdwe Mfg Corp 27 Ludlow St NY 2 NY
Philadelphia Hdwe & Malleable Iron Wks Philadelphia Pa
U S Register Co 344 E Burnham St Battle Creek Mich

RESIN—snythetic

The Borden Co Chemical Div 350 Madison
Devoe & Raynolds Co Inc Dept A-5 787 First Av N Y 17 N Y p.207
The Dow Chemical Co Midland Mich
E I du Pont de Nemours & Co Inc Wilmington 98 Del
Firestone Plastics Co Pottstown Pa p.231
Industrial Chemical Sales Div West Virginia Pulp & Paper Co New York Central Bldg NY NY
The Mengel Co Inc Louisville 1 Ky p.13, 181
Monite Waterproof Glue Co 1628 2nd St N Minneapolis 11 Minn
Monsanto Chemical Co St Louis Mo
The Neville Co Neville Island Pittsburgh 25 Pa
Perkins Glue Co Lansdale Pa
Pittsburgh Plate Glass Co 2121-8 Grant Bldg Pittsburgh 19 Pa p.209
Placo Div Paisley Products Inc 718 Washington Av North Minneapolis Minn
Reilly Tar & Chemical Corp 1615 Merchants Bank Bldg Indianapolis 4 Ind
The Resinous Products & Chemical Co Philadelphia 5 Pa
Resinox Corp 30 Rockefeller Plz NY NY
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
U S Plywood Corp 55 W 44th St NY 18 NY p.13, 181, 220, 257

RIDGE ROLL

Allen Steel Products 12911 Hillview Detroit 27 Mich
Ceco Steel Products Corp 5601 W 26th Chgo 50 Ill p.168-169
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Cincinnati Sheet Metal & Roofing Co Cincinnati 2 Ohio
Globe Iron Roofing & Corrugating Co Inc Newport Ky
Inland Steel Products Co (formerly Milcor Steel Co) 4027 W. Burnham St Milwaukee 1 Wis p.446-447

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Klauer Mfg Co Dubuque Ia
Mid-States Steel & Wire Co Crawfordsville Ind
Newport Rolling Mill Co Newport Ky
Nichols Wire & Aluminum Co Davenport Ia
Northwest Metal Prod Inc Seattle 4 Wash
Penn Supply & Metal Corp 1831 N 5th St Philadelphia 22 Pa
Reeves Steel & Mfg Co Dover O
Republic Steel Corp Republic Bldg Cleveland 1 Ohio
Tennessee Coal Iron & RR Co U S Steel Corp Sub Birmingham 2 Ala p.392
Williams-Wallace Co San Francisco 7 Cal

ROLLOFF BODIES—truck

Beall Pipe & Tank Corp Portland Ore
Carter Mfg Co Memphis 2 Tenn
The R-B Company 1921 Guinotte Av Kansas City 1 Mo p.488
A Streich & Bros Co Oshkosh Wis
Wentworth & Irwin Inc Portland 14 Ore

ROOF COATING

Abesto Mfg Corp Dept D3 Michigan City Ind p.354
Acme Asbestos Covering & Flooring Co 246 N Elizabeth Chgo 7 Ill
American Asphalt Roof Corp 7600 E 15th St Kansas City 3 Mo
Barrett Div Allied Chem & Dye Corp 40 Rector NY 6 NY p.351
Bird & Son East Walpole Mass p.333, 356
Breinig Bros Inc Hoboken N J
Calbar Paint & Varnish Co 2612 N Martha St Philadelphia 25 Pa
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Cerasit Waterproofing Corp 512 S Canal St Chgo 7 Ill
Certain-teed Prod Corp 120 E Lancaster Av Ardmore Pa
Chemical Supply Co 225 Plymouth Bldg Cleveland 15 Ohio (asphalt)
The Dad & Lad Co New Lenox Ill
Devoe & Raynolds Co Inc Dept A-5 787 First Av N Y 17 N Y p.207
Elliott Paint & Varnish Co 4525 W 5th Av Chgo 24 Ill p.221
The Flintkote Co 30 Rockefeller Plaza NY 20 NY
Ford Roofing Products Co 111 W Washington Chgo 2 Ill
Forman Ford & Co 111 S 2nd St Minneapolis 1 Minn
Globe Roofing Prod Co Inc Whiting Ind
Geo C Gordon Chemical Co Kansas City 7 Mo
Haynes Products Co 4007 Farnam St Omaha 3 Neb
Hoosier Sash & Door Co Anderson Ind p.194
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Johns-Manville Corp Box 290 22 E 40th N Y 16 N Y p.280, 301, 347, 375
Lastik Products Inc Keenan Bldg Pittsburg 22 Pa
The Lehon Co 4425 S Oakley Av Chgo 9 Ill
Nichols Wire & Aluminum Co Davenport Ia
The Paraffine Companies Inc 475 Brannan St San Francisco 19 Cal
Pecora Paint Co Inc American & Venango Sts Philadelphia 40 Pa
Pittsburgh Plate Glass Co Pittsburgh 22 Pa p.209
Reilly Tar & Chemical Corp 1615 Merchants Bank Bldg Indianapolis 4 Ind
Republic Creosoting Co Merchants Bank Bldg Indianapolis 4 Ind
Richkraft Co 228 N La Salle Chgo 1 Ill p.341
The Ruberoid Co 500 Fifth Av NY 18 NY p.349
L Sonneborn Sons Inc 88 Lexington Av New York 16 N Y
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
The Texas Co 135 E 42nd NY NY p.343
United Gilsonite Laboratories Scranton Pa
United States Gypsum Co 300 W Adams Chgo 6 Ill p.293

ROOFING—asbestos

The Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Ehret Magnesia Mfg Co Valley Forge Pa
The Flintkote Co 30 Rockefeller Plaza New York 20 N Y
Johns-Manville Sales Corp Box 290 22 E 40th New York 16 N Y p.280, 301, 347, 375
Keasbey & Mattison Co Ambler Pa p.325
The Ruberoid Co 500 Fifth Av New York 18 N Y p.349

ROOFING—asphalt roll

American Asphalt Roof Corp 7600 E 15th St Kansas City 3 Mo
Asphalt Roofing Industry Bureau 2 West 45th St NY 19 NY
Barrett Div Allied Chem & Dye Corp 40 Rector NY 6 NY p.351
Bird & Son Inc East Walpole Mass p.333, 356
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Celotex Corp 120 S La Salle Chgo 3 Ill p.297, 329, 369, 439
Certain-teed Prod Corp 120 E Lancaster Av Ardmore Pa
Flintkote Co 30 Rockefeller Plaza NY 20 NY
Globe Roofing Prod Co Inc Whiting Ind
Hoosier Sash & Door Co Anderson Ind p.194
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Johns-Manville Corp Box 290 22 E 40th N Y 16 N Y p.280, 301, 347, 375
Koppers Co Inc Pittsburgh 19 Pa
Lehon Co 4425 S Oakley Chgo 9 Ill
Logan-Long Co 37 W Van Buren St Chicago 5 Ill
B F Nelson Mfg Co Minneapolis 13 Minn
The Paraffine Companies Inc 475 Brannan St San Francisco 19 Cal
Protective Papers Inc Union Ill p.354
Rubberoid Co 500 Fifth Av NY 18 NY p.349
Tamko Asphalt Products Inc Joplin Mo
The Texas Co 135 E 42nd NY NY p.343
United States Gypsum Co 300 W Adams Chgo 6 Ill p.293

ROOFING—metal

Aluminum Co of America 1723 Gulf Bldg Pittsburgh 19 Pa (aluminum sheet) p.339
American Steel & Wire Co Cleveland Ohio (steel) p.392
Bethlehem Steel Corp Bethlehem Pa (steel)
Carnegie Illinois Steel Corp U S Steel Corp Sub Carnegie Bldg Pittsburgh 30 Pa (steel)
Ceco Steel Products Corp 5601 W 26th St Chicago 50 Ill (steel) p.168-169
Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
Chemical Supply Co 225 Plymouth Bldg Cleveland 15 Ohio (aluminum sheet)
Cheney Industries Trenton 5 N J (aluminum sheet & steel)
Cincinnati Sheet Metal & Roofing Co Cincinnati 2 Ohio (steel)
Columbia Steel Co Russ Bldg San Francisco 6 Calif (steel) p.392
Continental Steel Corp Kokomo Ind (steel) p.395
Goldsmith Metal Lath Co Cincinnati 32 Ohio (steel)
Hoosier Sash & Door Co Anderson Ind p.194
Illinois Zinc Co 2959 W 47th St Chgo 32 Ill
International Nickel Co Inc 67 Wall St New York 5 N Y (Monel)
Klauer Mfg Co Dubuque Iowa (steel)
Mid-States Steel & Wire Co Crawfordsville Ind (steel)
New Holland Metals Co Dept A-49 Mountville Pa (aluminum sheet) p.353
Nichols Wire & Aluminum Co Davenport Iowa (aluminum sheet & steel)
Permanente Products Co Aluminum Div Kaiser Building Oakland 12 Calif
Potts-Farrington Co 24 Cherry St Philadelphia 7 Pa
Reeves Steel & Mfg Co Dover O
Republic Steel Corp Republic Bldg Cleveland 1 Ohio (steel)
Reynolds Metals Co Building Products Div 2002 S 9th St Louisville 1 Ky (aluminum) p.93
Rigid-Tex Corp 658 Ohio St Buffalo 3 NY
Southern States Iron Roofing Co Savannah Ga (aluminum sheet & steel)
Tennessee Coal Iron & RR Co U S Steel Corp Sub Birmingham 2 Ala (steel) p.392
Tiffin Art Metal Co Tiffin 16 Ohio (aluminum sheet & steel)
Truscon Steel Co Youngstown 1 Ohio (steel)
Wheeling Corrugating Co Wheeling W Va (steel) p.441
Wheeling Steel Corp Wheeling W Va (steel)

ROOFING KNIVES

The Lehon Co 4425 S Oakley Av Chicago 9 Ill
Modern Specialties Co 4140 W Harrison St Chicago 24 Ill
Red Devil Tools Irvington 11 N J p.10

ROPE—AWNING

American Mfg Co Noble & West Streets Brooklyn 22 N Y
American Tent & Awning Co 1132 Mission St San Francisco 3 Cal
The Astrup Co 2937 W 25th St Cleveland 13 Ohio
Canvas Specialty Co P O Box 937 Hartford Conn
Geo B Carpenter & Co 440 N Wells Chgo Ill
Columbian Rope Co 309 Genesee St Auburn N Y
Plymouth Cordage Co North Plymouth Mass
Raucher Mfg Co Inc Norwich Conn
St Louis Cordage Mills St Louis Mo
The Turner & Stanton Co Norwich Conn
William B Whitaker Sedgley & Castor Aves Philadelphia 24 Pa

ROPE—manila & sisal

American Mfg Co Noble & West Sts Brooklyn 22 N Y
The Astrup Co 2957 W 25th St Cleveland 13 Ohio
Cating Rope Wks Inc Maspeth L I N Y
Columbian Rope Co 309 Genesee St Auburn N Y
Newark Ladder & Bracket Co Inc Clark (Rahway) N J
New Bedford Cordage Co 233 Broadway NY NY
Plymouth Cordage Co North Plymouth Mass
St Louis Cordage Mills St Louis Mo
Tubbs Cordage Co San Francisco Cal
Wall Rope Wks Inc 48 South NY NY
Waterbury Rope Co 401 Park Av Brooklyn N Y
Whitlock Cordage Co 46 South N Y 5 N Y

ROPE—wire

American Cable Div American Chain & Cable Co Inc Wilkes-Barre Pa
American Steel & Wire Co U S Steel Corp Sub Rockefeller Bldg Cleveland 13 O p.392
Bethlehem Steel Co Bethlehem Pa
Broderick & Bascom Rope Co 4203 N Union Blvd St Louis 15 Mo
Canvas Specialty Co P O Box 937 Hartford Conn
Colorado Fuel & Iron Corp Denver Colo
Columbia Steel Co Russ Bldg San Francisco 6 Cal p.392
Hazard Wire Rope Div American Chain & Cable Co Inc Wilkes-Barre Pa
Macwhyte Co Kenosha Wis
John A. Roebling's Sons Co Trenton N J
Tennessee Coal Iron & RR Co U S Steel Corp Sub Birmingham 2 Ala p.392
Upson-Walton Co Cleveland O

RULES—board and log

Frank R Buck & Co 2133 W Touhy Ave Chicago 45 Ill
Lufkin Rule Co Saginaw Mich
Parisian Novelty Co 3510 S Western Av Chicago 9 Ill

RULES—folding

Eagle Rule Mfg Corp 517 Hunts Point Av New York 59 N Y
Evans & Co 57 Branford St Newark 5 N J
Keuffel & Esser Co Hoboken N J
Lufkin Rule Co Saginaw Mich
Master Rule Mfg Co Inc 815 E 136th NY NY
The Stanley Wks New Britain Conn p.253

RULES—slide

Eugene Dietzgen Co 2425 N Sheffield Chgo Ill
Keuffel & Esser Co Hoboken N J
Parisian Novelty Co 3510 S Western Av Chicago 9 Ill
Pickett & Eckel Inc 5 S Wabash Av Chicago 3 Ill
Union Tool Co Orange Mass (caliper)

RULES—steel

Brown & Sharpe Mfg Co 235 Promenade St Providence 1 R I
Economy Novelty & Prtg Co 225 W 39th St New York 18 N Y

Number after listing indicates page on which advertisement appears

Keuffel & Esser Co Hoboken N J
Lufkin Rule Co Saginaw Mich
Master Rule Mfg Co 815 E 136th NY NY
Millers Falls Co Greenfield Mass
Ox-Wall Tool Co 928 Broadway New York 10 N Y
Parisian Novelty Co 3510 S Western Av Chicago 9 Ill
Shedd-Brown Mfg Co Minneapolis 15 Minn
The Stanley Wks New Britain Conn p.253
L S Starrett Co Athol Mass
Union Tool Co Orange Mass

RUST PREVENTING & REMOVING COMPOUNDS

American Chemical Paint Co Ambler Pa
Samuel Cabot Inc 2348 Oliver Bldg Boston 9 Mass
Carbozite Corp Pittsburgh Pa
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Continental Asbestos & Refining Corp 1 Madison Ave New York 10 N Y
Devoe & Raynolds Co Inc 787 First Av New York 17 N Y p.207
E I du Pont de Nemours & Co Inc Wilmington 98 Dela
Ensign Products Co Cleveland 5 Ohio
R M Hollingshead Corp Camden N J
Neilson Chemical Co Detroit Mich
Nox-Rust Chemical Corp 2425 S Halsted Chgo 8 Ill
Oakite Products Inc 22 Thames New York 6 N Y
Pennsylvania Salt Mfg Co Philadelphia 7 Pa
Republic Creosoting Co Merchants Bank Bldg Indianapolis 4 Ind
Rusticide Products Co Cleveland 14 Ohio
The Simoniz Co Industrial Div 2100 S Indiana Av Chgo Ill
Smith Oil & Refining Co Rockford Ill
L Sonneborn Sons Inc Bldg Products Div 88 Lexington Av New York 16 N Y
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Stop-Rust Co Chattanooga Tenn
The Texas Co 135 E 42nd St New York 17 N Y p.343
Wayne Chemical Products Co Copeland & MCRR Detroit 17 Mich

SAND BLAST EQUIPMENT

American Wheelabrator & Equipment Co Mishawaka Ind
The Macleod Co 2236 Bogan St Cincinnati 22 Ohio
Paasche Airbrush Co 1909 W Diversey Pkwy Chicago 14 Ill

SANDER HEADS—brush backed

Arcade Mfg Co Freeport Ill
Vonnegut Moulder Corp Indianapolis 2 Ind

SANDERS— belt, drum, spindle & disc

American Mfg Co Inc Tacoma 2 Wash
Boice Crane Co 930 W Central Av Toledo 6 Ohio
Chicago Pneumatic Tool Co 6 E 44th St New York 17 N Y (disc only)
Crescent Machine Co Leetonia Ohio (spindle & disc only)
Delta Mfg Co Milwaukee 1 Wis (belt & disc)
Ekstrom Carlson & Co Rockford Ill
Newman Bros Inc 660 W 4th St Cincinnati 3 Ohio
Oliver Machinery Co Grand Rapids 2 Mich
Red Devil Tools Irvington 11 N J p.10
Reid-Way Inc Cedar Rapids Iowa
Stanley Electric Tools 111 Elm New Britain Conn p.253
Walker-Turner Co Inc Plainfield N J
Wayvell Chappell & Co Waukegan Ill
Yates-American Mach Co Beloit Wis

SANDERS—floor

American Floor Surfacing Mach Co 521 S St Clair St Toledo 3 Ohio p.314
Atlas Floor Surfacing Mach Corp 248 E 34th NY 16 NY
Clarke Sanding Mach Co Muskegon Mich
Hilger Co St Cloud Minn
Holt Mfg Co 651 20th St Oakland 12 Calif
Lincoln-Schlueter Floor Mchy Co 512 S Peoria Chgo Ill
Porter-Cable Mach Co 1600-4 N Salina St Syracuse 8 N Y
Red Devil Tools Irvington 11 N J p.10
Reid-Way Inc Cedar Rapids Iowa
Walker-Turner Co Inc Plainfield N J

SANDERS—portable, electric

American Floor Surfacing Machine Co 521 S St Clair St Toledo 3 Ohio p.314
Black & Decker Mfg Co Towson 4 Md
Clarke Sanding Mach Co Muskegon Mich
Dremel Mfg Co 2420 18th St Racine Wis
Holt Mfg Co 651 20th St Oakland 12 Cal
Independent Pneumatic Tool Co Aurora Ill
Mall Tool Co 7733 South Chicago Av Chicago 19 Ill
Millers Falls Co Greenfield Mass
Milwaukee Elec Tool Corp 5360 W State St Milwaukee 8 Wis
Porter-Cable Machine Co 1600-4 N Salina St Syracuse 8 N Y
Red Devil Tools Irvington 11 N J p.10
Sterling Tool Products Co 363 E Ohio St Chicago Ill

SANDING MACHINE DISCS

Abrasive Products Inc South Braintree Mass
American Floor Surfacing Machine Co. 521 S St Clair St Toledo 3 Ohio p.314
Armour Sandpaper Works 1355 W 31st St Chicago 9 Ill
Behr-Manning Corp Troy N Y
Boice Crane Co 930 W Central Av Toledo 6 Ohio
Mid-West Abrasive Co 500 S Washington St Owosso Mich
Pittsburgh Plate Glass Co Baltimore 29 Md p.212
Red Devil Tools Irvington 11 N J p.10
Reid-Way Inc Cedar Rapids Iowa
James H Rhodes & Co 157 W Hubbard St Chicago 10 Ill
Sandpaper Inc Rockland Mass
Standard Bronze Co Bayonne 8 N J p.255

SANDPAPER

Abrasive Prod Inc South Braintree Mass
American Floor Surfacing Machine Co 521 S St Clair St Toledo 3 Ohio p.314
Armour & Co 1355 W 31st St Chicago 9 Ill
Behr-Manning Corp Troy N Y
Clover Mfg Co Norwalk Conn
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Mid-West Abrasive Co 500 S Washington St Owosso Mich
Red Devil Tools Irvington 11 N J p.10
Sandpaper Inc Rockland Mass

SASH—storm, metal

The Adams Co Dubuque Iowa
Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Detroit Steel Products Co AL-4 2269 E Grand Blvd Detroit 11 Mich p.176-177
Hope's Windows Inc Jamestown N Y
New Monarch Machine & Stamping Co Des Moines Iowa
Steelcraft Mfg Co 9050 Blue Ash Rd Rossmoyne Ohio
Truscon Steel Co Youngstown 1 Ohio

SASH—storm wood

Angel Novelty Co Fitchburg Mass
Carr Adams & Collier Co Dubuque Ia p.147
Cole Mfg Co Box 2657 Memphis 2 Tenn p.192
Continental Screen Co 1249 Washington Blvd Detroit 26 Mich p.136
Farley & Loetscher Mfg Co Dubuque Ia
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Hoosier Sash & Door Co Anderson Ind p.194
Huttig Mfg Co Box AL Muscatine Iowa p.171
Huttig Sash & Door Co 1206 S Vandeventer Av St Louis 10 Mo
Marquart Millwork Co Oshkosh Wis p.148
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
Northwest Door & Plywood Sales Tacoma 1 Wash
Phenix Mfg Co 4129 N Port Washington Rd Milwaukee 12 Wis p.411
Segelke & Kohlhaus Co La Crosse Wis
Geo Silbernagel & Sons Co Wausau Wis
Smalley Products Co Groton Conn

SASH BALANCES—adjustable

Caldwell Mfg Co 66 Industrial St Rochester 4 N Y p.195
Duplex Inc 634 N LaPeer Dr Los Angeles 46 Cal
Gregg & Son 25 Crown St Nashua N H p.158-159
Hoosier Sash & Door Co Anderson Ind p.194
Ideal Brass Wks Inc 250 E 5th St St Paul 1 Minn p.248
Protex Weatherstrip Mfg Co 4500 S Western Chgo Ill
Pullman Mfg Corp Rochester 7 N Y
Turner & Seymour Mfg Co Torrington Conn p.161

SASH BALANCES—spiral

Caldwell Mfg Co 66 Industrial St Rochester 4 N Y p.195
Milwaukee Stamping Co 802 S 72nd St Milwaukee 14 Wis
Unique Balance Co Inc 25 Bruckner Blvd NY 54 NY

SASH BALANCES—spring

Acme Sash Balance Co 1626 Long Beach Av Los Angeles 21 Cal
Caldwell Mfg Co 66 Industrial St Rochester 4 N Y p.195
P & F Corbin Park St New Britain Conn
Dorbin Metal Strip Mfg Co 2408 S Cicero Av Chicago 50 Ill
Duplex Inc 634 N LaPeer Dr Los Angeles 46 Cal
W H Fabry Mfg Co 620 S Date Av Alhambra Cal
Grand Rapids Hdwe Co Grand Rapids Mich p.247
Gregg & Son 25 Crown St Nashua N H p.158-159
Master Metal Strip Service Inc 1720 N Kilbourn Av Chicago 39 Ill
Millwork Distributors Co 2 N Kresson St Baltimore 24 Md p.188
Protex Weatherstrip Mfg Co 4500 S Western Chgo Ill
Pullman Mfg Corp Rochester 7 N Y
Samson Products Co 3219 Armitage Av Chicago 47 Ill
Star Sash Balance Corp Oak Harbor Ohio
Turner & Seymour Mfg Co Torrington Conn p.161
Unique Balance Co Inc 25 Bruckner Blvd NY 54 NY
Weatherproof Products Corp 329 Westport Rd Kansas City 2 Mo (metal) p.175
Zegers Inc 8088 South Chicago Av Chgo 17 Ill p.197

SASH CONTROL

Air-Tite Window Stay Co Chicopee Mass p.193
Arrow Mfg Co PO Box 468 Independence Kans p.257
P & F Corbin Park St New Britain Conn
Ideal Brass Wks Inc 250 E 5th St St Paul 1 Minn p.248
J N Vikre Co Inc 3016 14th Av South Minneapolis Minn

SASH PULLEYS

Arcade Mfg Co Freeport Ill
Champion Hdwe Co Geneva O
Chantrell Hdwe & Tool Co Fitchburg Mass
Cleveland Lock Wks Div Consolidated Iron Steel Mfg Co 1292 E 53rd St Cleveland 14 Ohio p.256
P & F Corbin Park St New Britain Conn
Grand Rapids Hdwe Co Grand Rapids 2 Mich p.247
Grant Pulley & Hdwe Co 33-36 57th St Woodside Long Island N Y
Phoenix Lock Co Newark 7 N J
Protex Weatherstrip Mfg Co 4500 S Western Chgo Ill
Russell & Erwin Div. The American Hdwe Corp New Britain Conn p.241
The Stanley Wks New Britain Conn p.253

SASH WEIGHTS

Belmont Smelting & Refining Wks Inc 330 Belmont Av Brooklyn N Y
Grey Iron Casting Co Mt Joy Pa

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Industrial Iron Works 6011 S W Macadam Av Portland 1 Ore
Johnston & Jennings Co Cleveland O
Quinn Wire & Iron Wks Boone Ia
Sterling Foundry Co Inc Sterling Ill
Thayer Fdry Co Atchison Kan
Waterbury Fdry Co Waterbury Conn
Western Foundry Co 2400 S W Water Av Portland 1 Ore
Yonkers Sash Weight Corp Yonkers 1 N Y

SAW GUARDS

American Saw Mill Mchry Co Hackettstown N J
E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Beach Mfg Co Montrose Pa
Boice Crane Co 930 W Central Av Toledo 6 Ohio
Crescent Machine Co Leetonia O
J A Fay & Egan Co 2022 Eastern Av Cincinnati 22 Ohio
Logan Co Inc Louisville 6 Ky
Yates-American Mach Co Beloit Wis

SAW MANDRELS

American Saw Mill Machinery Co Hackettstown N J
Beach Mfg Co Montrose Pa
Clizbe Bros Mfg Co Plymouth Ind
Consolidated Machinery & Supply Co Ltd 2029 Santa Fe Av Los Angeles 21 Calif
Corinth Machinery Co Corinth Miss
Corley Mfg Co Chattanooga 1 Tenn
Cunningham Mchy Co 735 Ricou St Shreveport La p.487
A B Farquhar Co York Pa
J A Fay & Egan Co 2022 Eastern Av Cincinnati 22 Ohio
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
Frick Co Dept 75 Waynesboro Pa p.491
Lane Mfg Co Montpelier Vt
Prescott Co Menominee Mich
The Wheland Co Chattanooga 2 Tenn
Yates American Mach Co Beloit Wis

SAW REPAIRS & ADJUSTMENTS

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Corley Mfg Co Chattanooga 1 Tenn
Cunningham Mchy Co 735 Ricou St Shreveport La p.487
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
E T Lippert Saw Co 608 Lincoln Av Pittsburgh 9 Pa
Miner & Son Saw Works Shreveport 90 La
J H Miner Saw Mfg Co Meridian Miss p.488

SAW SETS

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
John H Graham & Co Inc 105 Duane NY 8 NY
Hanchett Mfg Co Big Rapids Mich
Misener Mfg Co Inc Syracuse N Y
Millers Falls Co Greenfield Mass
Sandvik Saw & Tool Corp 47 Warren NY 7 NY
Simonds Saw & Steel Co Fitchburg Mass
The Stanley Wks New Britain Conn p.253
E C Stearns & Co Syracuse N Y
Yates-American Mach Co Beloit Wis

SAW SHARPENING MACHINES

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Foley Mfg Co Minneapolis Minn
Hanchett Mfg Co Big Rapids Mich
Prescott Co Menominee Mich
Reed-Prentice Corp Worcester 4 Mass (chain)
Wardwell Mfg Co Cleveland 9 O
Yates-American Mach Co Beloit Wis

SAW SWAGES & SHAPERS

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Hanchett Mfg Co Big Rapids Mich

SAWMILL DOGS

Allis Chalmers Mfg Co Milwaukee Wis p.484
American Saw Mill Mchry Co Hackettstown N J
Chase Turbine Mfg Co Orange Mass
Corinth Machinery Co Corinth Miss
Corley Mfg Co Chattanooga 1 Tenn
Cunningham Mchy Co 735 Ricou St Shreveport La p.487
A B Farquhar Co York Pa
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
Frick Co Dept 75 Waynesboro Pa p.491
Kent Machine Co 117 Portage St Cuyahoga Falls Ohio
Lane Mfg Co Montpelier Vt
McDonough Mfg Co Eau Claire Wis
Prescott Co Menominee Mich
The Wheland Co Chattanooga 2 Tenn

SAWS—band

Allis Chalmers Mfg Co Milwaukee Wis p.484
American Saw Mill Mchry Co Hackettstown N J
E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Boice Crane Co 930 W Central Av Toledo 6 Ohio
C H & E Mfg Co 3849 N Palmer St Milwaukee 12 Wis
Consolidated Machinery & Supply Co Ltd 2029 Santa Fe Av Los Angeles 21 Calif
Delta Mfg Co Milwaukee Wis
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
J A Fay & Egan Co 2022 Eastern Av Cincinnati 22 Ohio
The Filer & Stowell Co 147 Becher St Milwaukee 7 Wis
Heston & Anderson Div St Paul Fdry & Mfg Co 606 W Kirkwood St Fairfield Iowa
R Hoe & Co Inc 910 E 138th St New York 54 N Y
Huther Bros Saw Mfg Co Inc 1290 University Av Rochester 7 N Y p.486
E T Lippert Saw Co 608 Lincoln Av Millvale Pittsburgh 9 Pa
Millers Falls Co Greenfield Mass
Oliver Machinery Co Grand Rapids 2 Mich
Parks Woodworking Mach Cincinnati O
Simonds Saw & Steel Co Fitchburg Mass
Walker Turner Co Inc Plainfield N J
J D Wallace & Co 153 S California Av Chgo 12 Ill
Wellman Products Co Cleveland 3 Ohio
S A Woods Machine Co Boston 27 Mass
Yates-American Mach Co Beloit Wis

SAWS—bench

American Saw Mill Mchry Co Hackettstown N J
Arcade Mfg Co Freeport Ill
E C Atkins & Co 402 S Illinois St Indianapolis Ind
Beach Mfg Co Montrose Pa
Boice Crane Co 930 W Central Av Toledo 6 Ohio
C H & E Mfg Co 3849 N Palmer St Milwaukee 12 Wis
Consolidated Machinery & Supply Co Ltd 2029 Santa Fe Av Los Angeles 21 Calif
Delta Mfg Co Milwaukee Wis
Heston & Anderson Div St Paul Fdry & Mfg Co 606 W Kirkwood St Fairfield Iowa
R Hoe & Co Inc 910 E 138th St New York 54 N Y
Parks Woodworking Machine Co Cincinnati O
Walker Turner Co Inc Plainfield N J
J D Wallace & Co 153 S California Av Chicago 12 Ill
Yates-American Machine Co Beloit Wis

SAWS—bucking

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Cummings Machine Works 9 Melcher Boston 10 Mass
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Harry A Lowther Co 141 W Jackson Blvd Chgo 4 Ill
Mall Tool Co 7733 South Chicago Av Chgo 19 Ill
Mill & Mine Supply Co Seattle 4 Wash
Ohlen-Bishop Co Columbus O
Sandvik Saw & Tool Corp 47 Warren New York 7 N Y

SAWS—chamfering

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Huther Bros Saw Mfg Co Inc 1290 University Av Rochester 7 N Y p.486
Simonds Saw & Steel Co Fitchburg Mass

SAWS—circular

American Saw Mill Mchry Co Hackettstown N J
E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Beach Mfg Co Montrose Pa
Boice Crane Co 930 W Central Av Toledo 6 Ohio
Consolidated Machinery & Supply Co Ltd 2029 Santa Fe Av Los Angeles 21 Calif
Corley Mfg Co Chattanooga 1 Tenn
Delta Mfg Co Milwaukee Wis
DeWalt Inc 54 Fountain Av Lancaster Pa p.477
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
The Filer & Stowell Co 147 Becher St Milwaukee 7 Wis
R Hoe & Co Inc 910 E 138th St New York 54 N Y
Huther Bros Saw Mfg Co Inc 1290 University Av Rochester 7 N Y p.486
E T Lippert Saw Co 608 Lincoln Av Pittsburgh 9 Pa
The Master Woodworker Mfg Co Inc 409 E Fort Detroit 26 Mich
J H Miner Saw Mfg Co Meridian Miss p.488
Nordberg Mfg Co Dept 132A Milwaukee 7 Wis
Ohlen-Bishop Co Columbus O
Oliver Machinery Co Grand Rapids 2 Mich
Parks Woodworking Machine Co Cincinnati O
L Power & Company 2815 Oakford Philadelphia 46 Pa
St Paul Fdry & Mfg Co St Paul 3 Minn
Simonds Saw & Steel Co Fitchburg Mass
Walker Turner Co Inc East Plainfield N J
J. D. Wallace & Co 153 S California Av Chicago 12 Ill
Yates-American Mach Co Beloit Wis

SAWS—circular dado

American Saw Mill Mchry Co Hackettstown N J
E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Beach Mfg Co Montrose Pa
Boice Crane Co 930 W Central Av Toledo 6 Ohio
Consolidated Machinery & Supply Co Ltd 2029 Santa Fe Av Los Angeles 21 Calif
DeWalt Inc 54 Fountain Av Lancaster Pa p.477
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
J A Fay & Egan Co 2022 Eastern Av Cincinnati 22 Ohio
Huther Bros Saw Mfg Co Inc 1290 University Av Rochester 7 N Y p.486
The Master Woodworker Mfg Co Inc 409 E Fort Detroit 26 Mich
St Paul Fdry & Mfg Co St Paul 3 Minn
Simonds Saw & Steel Co Fitchburg Mass
Walker-Turner Co Inc Plainfield N J
J D Wallace & Co 153 S California Av Chicago 12 Ill
Yates-American Mach Co Beloit Wis

SAWS—cutoff

American Saw Mill Mchry Co Hackettstown N J
E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Beach Mfg Co Montrose Pa
C K L Machinery Co 160 Harrison St Oshkosh Wis

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Consolidated Machinery & Supply Co Ltd 2029 Santa Fe Av Los Angeles 21 Calif
Corley Mfg Co Chattanooga 1 Tenn
Crescent Mach Co Leetonia O
DeWalt Inc 54 Fountain Av Lancaster Pa p.477
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
J A Fay & Egan Co 2022 Eastern Av Cincinnati 22 Ohio
Frick Co Dept 75 Waynesboro Pa p.491
Heston & Anderson Div St Paul Foundry & Mfg Co 606 W Kirkwood St Fairfield Iowa
R Hoe & Co Inc 910 E 138th St New York 54 N Y
Huther Bros Saw Mfg Co Inc 1290 University Av Rochester 7 N Y p.486
E T Lippert Saw Co 608 Lincoln Av Millvale Pittsburgh 9 Pa
The Master Woodworker Mfg Co Inc 409 E Fort Detroit 26 Mich
Mattison Machine Works Rockford Ill
Ohlen-Bishop Co Columbus O
Oliver Machinery Co Grand Rapids 2 Mich
C O Porter Machinery Co 666-668 Front Av N W Grand Rapids 4 Mich
St Paul Fdry & Mfg Co St Paul 3 Minn
Sandvik Saw & Tool Corp 47 Warren New York 7 N Y
Simonds Saw & Steel Co Fitchburg Mass
Stetson-Ross Mach Co Seattle 4 Wash
Walker-Turner Co Inc Plainfield N J
J D Wallace & Co 153 S California Av Chicago 12 Ill
S A Woods Machine Co Boston 27 Mass
Yates-American Mach Co Beloit Wis

SAWS—grooving

American Saw Mill Mach Co Hackettstown N J
E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Beach Mfg Co Montrose Pa
Consolidated Machinery & Supply Co Ltd 2029 Santa Fe Av Los Angeles 21 Calif
DeWalt Inc 54 Fountain Av Lancaster Pa p.477
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
J A Fay & Egan Co 2022 Eastern Av Cincinnati 22 Ohio
Huther Bros Saw Mfg Co Inc 1290 University Av Rochester 7 N Y p.486
Misener Mfg Co Inc Syracuse N Y
Ohlen-Bishop Co Columbus O
Simonds Saw & Steel Co Fitchburg Mass
Walker-Turner Co Inc Plainfield N J
S A Woods Machine Co Boston 27 Mass
Yates-American Mach Co Beloit Wis

SAWS—hand

American Saw & Mfg Co Springfield Mass
E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Sandvik Saw & Tool Corp 47 Warren Av New York 7 N Y
Simonds Saw & Steel Co Fitchburg Mass

SAWS—hack

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Champion Blower & Forge Co Lancaster Pa
Crescent Tool Co Jamestown N Y
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Forsberg Mfg Co Bridgeport 1 Conn
Mephisto Tool Co Inc Hudson N Y
Millers Falls Co Greenfield Mass
Plomb Tool Co 2209 Santa Fe Av Los Angeles 54 Cal
Simonds Saw & Steel Co Fitchburg Mass
L S Starrett Co Athol Mass

SAWS—hole

Black & Decker Mfg Co Towson 4 Md
Circo Tool Co Milwaukee 3 Wis
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Millers Falls Co Greenfield Mass
Misener Mfg Co Inc Syracuse 2 N Y

SAWS—inserted tooth circular

American Saw Mill Machinery Co Hackettstown N J
E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Chattanooga Saw Wks Chattanooga Tenn
Corley Mfg Co Chattanooga 1 Tenn
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
R Hoe & Co Inc 910 E 138th NY 54 NY
Huther Bros Saw Mfg Co Inc 1290 University Av Rochester 7 N Y p.486
E T Lippert Saw Co 608 Lincoln Av Pittsburgh 9 Pa
Miner & Son Saw Works Shreveport 90 La
J H Miner Saw Mfg Co Meridian Miss p.488
Ohlen-Bishop Co Columbus O
Simonds Saw & Steel Co Fitchburg Mass
Yates-American Mach Co Beloit Wis

SAWS—jig

Beach Mfg Co Montrose Pa
Boice Crane Co 930 W Central Av Toledo 6 Ohio
Dremel Mfg Co 2420 18th St Racine Wis
E T Lippert Saw Co 608 Lincoln Av Pittsburgh 9 Pa
Walker Turner Co Inc East Plainfield N J

SAWS—mitre

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Beach Mfg Co Montrose Pa
DeWalt Inc 54 Fountain Av Lancaster Pa p.477
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
R Hoe & Co Inc 910 E 138th St N Y 54 N Y
Huther Bros Saw Mfg Co Inc 1290 University Av Rochester 7 N Y p.486
Ohlen-Bishop Co Columbus O
Simonds Saw & Steel Co Fitchburg Mass
Walker-Turner Co Inc Plainfield N J

SAWS—muley

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Ohlen-Bishop Co Columbus O
Simonds Saw & Steel Co Fitchburg Mass

SAWS—portable electric

American Floor Surfacing Machine Co 521 S St Clair St Toledo 3 Ohio p.314
American Saw Mill Machinery Co Hackettstown N J
Beach Mfg Co Montrose Pa
Black & Decker Mfg Co Towson Md
Casey Mfg Co Oshkosh Wis
Consolidated Machinery & Supply Co Ltd 2029 Santa Fe Av Los Angeles 21 Calif
Dremel Mfg Co 2420 18th St Racine Wis
Heston & Anderson Div St Paul Fdry & Mfg Co 606 W Kirkwood St Fairfield Ia
Homelite Corp Port Chester N Y
Independent Pneumatic Tool Co Aurora Ill
Mall Tool Co 7733 South Chicago Av Chgo 19 Ill
Millers Falls Co Greenfield Mass
Milwaukee Electric Tool Corp 5360 W State St Milwaukee 8 Wis
Nordberg Mfg Co Milwaukee 7 Wis
Porter-Cable Machine Co 1600-4 N Salina St Syracuse 8 N Y
Reed-Prentice Corp Worcester 4 Mass
Stanley Electric Tools 111 Elm New Britain Conn p.253
U S Electrical Tool Co Cincinnati 14 O
The Vulcan Iron Works Co Denver 2 Colo
Fred W Wappat Inc 159 Valley St Mayville N Y p.482
The Wellman Products Co 1444 E 49th Cleveland 3 Ohio

SAWS—power, tree falling & log bucking

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Cummings Machine Works 9-11 Melcher Boston 10 Mass
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Hansen Mach & Supply Co 820 Broadway Eureka Cal
Homelite Corp Port Chester N Y
Jacques Power Saw Co Denison Tex
Lombard Governor Corp Ashland Mass
Harry A. Lowther Co 141 W Jackson Chgo 4 Ill
Mall Tool Co 7733 South Chicago Av Chgo 19 Ill
Mill & Mine Supply Co Seattle 4 Wash
Ottawa Mfg Co Ottawa Kansas
Reed-Prentice Corp Worcester 4 Mass
The Vulcan Iron Works Co Denver 2 Colo
Witte Engine Works Div of Oil Well Sup Co U S Steel Corp Sub Kansas City 3 Mo

SAWS—radial

American Saw Mill Mchry Co Hackettstown N J
Beach Mfg Co Montrose Pa
Consolidated Machinery & Supply Co Ltd 2029 Santa Fe Av Los Angeles 21 Calif
Construction Machinery Co Waterloo Iowa
DeWalt Inc 54 Fountain Av Lancaster Pa p.477
Franklin Machine Co East Providence R I
Porter-Cable Machine Co 1600-4 N Salina St Syracuse 8 N Y
Red Star Products Inc Garfield Av Norwalk O
Walker-Turner Co Inc Plainfield N J

SAWS—rip

American Saw Mill Machinery Co Hackettstown N J
E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Beach Mfg Co Montrose Pa
Consolidated Machinery & Supply Co Ltd 2029 Santa Fe Av Los Angeles 21 Calif
Corley Mfg Co Chattanooga 1 Tenn
DeWalt Inc 54 Fountain Av Lancaster Pa p.477
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Equipment Engineering Co St Charles Ill
J A Fay & Egan Co 2022 Eastern Av Cincinnati 22 Ohio
R Hoe & Co Inc 910 E 138th St New York 54 N Y
E T Lippert Saw Co 608 Lincoln Av Millvale Pittsburgh 9 Pa
Master Woodworker Mfg Co Inc 409 E Fort St Detroit 26L Mich
Newman Machine Co Greensboro N C
Oliver Machinery Co Grand Rapids 2 Mich
Simonds Saw & Steel Co Fitchburg Mass
J D Wallace & Co 153 S California Av Chicago 12 Ill
Yates-American Mach Co Beloit Wis

SAWS—solid tooth circular

American Saw Mill Machinery Co Hackettstown N J
E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Beach Mfg Co Montrose Pa
Corley Mfg Co Chattanooga 1 Tenn
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
R Hoe & Co Inc 910 E 138th NY 54 NY
Huther Bros Saw Mfg Co Inc 1290 University Av Rochester 7 N Y p.486
E T Lippert Saw Co 608 Lincoln Av Pittsburgh 9 Pa
Miner & Son Saw Works Shreveport 90 La
J H Miner Saw Mfg Co Meridian Miss p.488
Sandvik Saw & Tool Corp 47 Warren New York 7 N Y
Simonds Saw & Steel Co Fitchburg Mass
Yates-American Mach Co Beloit Wis

SAWS—swing

Beach Mfg Co Montrose Pa
C H & E Mfg Co 3849 N Palmer St Milwaukee 12 Wis
Consolidated Machinery & Supply Co Ltd 2029 Santa Fe Av Los Angeles 21 Calif
Corinth Machinery Co Corinth Miss
Corley Mfg Co Chattanooga Tenn
Crescent Machine Co Leetonia O

Number after listing indicates page on which advertisement appears

Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
J A Fay & Egan Co 2022 Eastern Av Cincinnati 22 Ohio
The Filer & Stowell Co 147 E Becher St Milwaukee 1 Wis
Heston & Anderson Div St Paul Fdry & Mfg Co 606 W Kirkwood St Fairfield Ia
Lane Mfg Co Montpelier Vt
Newman Machine Co Greensboro N C
Ohlen-Bishop Co Columbus O
Oliver Machinery Co Grand Rapids 2 Mich
S A Woods Machine Co Boston 27 Mass
Yates-American Machine Co Beloit Wis

SAWS—tilting arbor table

American Saw Mill Machinery Co Hackettstown N J
Beach Mfg Co Montrose Pa
Bennett-Ireland Inc 449 Pine St Norwich N Y p.386
Boice Crane Co 930 W Central Av Toledo 6 Ohio
C H & E Mfg Co 3849 N Palmer St Milwaukee 12 Wis
Consolidated Machinery & Supply Co Ltd 2029 Santa Fe Av Los Angeles 21 Calif
Construction Machinery Co Waterloo Ia
DeWalt Inc 54 Fountain Av Lancaster Pa p.477
J A Fay & Egan Co 2022 Eastern Av Cincinnati 22 Ohio
St Paul Fdry & Mfg Co St Paul 3 Minn
Walker-Turner Co Inc Plainfield N J
J D Wallace & Co 153 S California Av Chgo 12 Ill
Baxter D Whitney & Son Inc Winchendon Mass
Yates-American Mach Co Beloit Wis

SCAFFOLDS

American Ladder Co 3700 W 35th Chgo Ill
W W Babcock Co Bath N Y
John Berg Mfg Co 5319 S La Salle Chicago 9 Ill
Breyer Bros Whiting & Co Waupun Wis
J R Clark Co Spring Park Minn
The Goshen Mfg Co 10th & Reynolds Sts Goshen Ind
Marvel Equipment 1183 N Main St Oshkosh Wis p.487
Michigan Ladder Co Ypsilanti Mich
Moulton Ladder Mfg Co Somerville Mass
Newark Ladder & Bracket Co Inc Clark (Rahway) N J
Ridgely Trimmer Co Springfield O
Safeway Steel Prod Inc Milwaukee 13 Wis
John S Tilley Ladders Co Inc Watervliet N Y
Warner Mfg Co 801 16th Av SE Minneapolis 14 Minn
Woodenware Prod Corp 122 N 7th St Louis 1 Mo

SCALES—counter

Barnes Prod Inc Detroit Mich
Buffalo Scale & Mfg Co Inc Buffalo 13 N Y
John Chatillon & Sons 85 Cliff NY NY
Dayton Scale Co Dayton O
Detecto Scales Inc Div of Jacobs Bros Co Inc 1 Main St Brooklyn 1 N Y
The Exact Weight Scale Co Columbus Ohio
Fairbanks Morse & Co 600 S Michigan Av Chgo Ill
Howe Scale Co Rutland Vt
Toledo Scale Co Toledo O
Triner Scale & Mfg Co 2714 W 21st Chgo Ill

SCALES—moisture content, lumber

John Chatillon & Sons 85 Cliffe New York 7 N Y
Colloid Equipment Co Inc 50 Church St NY 7 NY
Detecto Scales Inc Div of Jacobs Bros Co Inc 1 Main St Brooklyn 1 N Y
Exact Weight Scale Co Columbus O
Fairbanks Morse & Co 600 S Michigan Av Chgo Ill
Grand Rapids Vapor Kiln Inc Grand Rapids 2 Mich
Moore Dry Kiln Co P O Box 4248 Jacksonville 1 Fla p.65
Standard Dry Kiln Co Indianapolis Ind
Toledo Scale Co Toledo Ohio

SCALES—platform, warehouse

American Scale Co 919 Baltimore Av Kansas City 6 Mo
Bonded Scale & Machine Co 19 Belleview Av Columbus 7 Ohio
Buffalo Scale & Mfg Co Inc Buffalo 13 N Y
John Chatillon & Son 85 Cliff NY NY
Dayton Scale Co Dayton O
Detecto Scales Inc Div of Jacobs Bros Co Inc 1 Main St Brooklyn 1 N Y
The Exact Weight Scale Co Columbus Ohio
Fairbanks Morse & Co 600 S Michigan Av Chgo Ill
Hanson Scale Co 525 N Ada Chgo 22 Ill
Howe Scale Co Rutland Vt
Toledo Scale Co Toledo O

SCHOOLS—correspondence

Commercial Trades Inst Dept D73-4 1400 W Greenleaf Av Chicago 26 Ill
International Correspondence Schools Box 4245-B Scranton 9 Pa

SCRAPERS—foot

Erco Mfg Co 2368 N Elston Av Chgo 14 Ill
Grey Iron Casting Co Mt Joy Pa
Lawrence Bros Sterling Ill
Richards-Wilcox Mfg Co Aurora Ill p.249
Standard Bronze Co Bayonne 8 N J p.255
Sterling Foundry Co Inc Sterling Ill

SCRAPERS—wood

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Fletcher Terry Co South St Forestville Conn p.256, 277, 320
Henry Disston & Sons Inc Tacony Philadelphia 3 Pa
Heller Brothers Co Newark 4 N J
Markwell Mfg Co Inc 200 Hudson St NY 13 NY
Millers Falls Co Greenfield Mass
Red Devil Tools Irvington 11 N J p.10
Sandvik Saw & Tool Corp 47 Warren St NY 7 NY

SCREEDS—base

Allen Steel Products 12911 Hillview Detroit 27 Mich
Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Consolidated Expanded Metal Cos
Inland Steel Products Co (formerly Milcor Steel Co) 4027 Burnham St Milwaukee 1 Wis p.446-447
Knapp Bros Mfg Co Joliet Ill
Mervin Mfg Co Erie Pa
Penn Metal Co Inc 205 E 42nd St NY 17 NY p.442-443

SCREEN WIRE

Ace Window Screen Co of America 1634 S Pulaski Rd Chgo 23 Ill
American Brass Co Waterbury Conn
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Clinton Wire Cloth Co Clinton Ia
Cyclone Fence Div American Steel & Wire Co U S Steel Corp Sub Waukegan Ill
Driver-Harris Co Harrison N J
Gilbert & Bennett Mfg Co Blue Island Ill
Hanover Wire Cloth Div Continental-United Industries Co Inc 612 Frock St Hanover Pa p.247
C O Jelliff Mfg Corp Southport Conn
Keystone Steel & Wire Co Peoria Ill p.397
New York Wire Cloth Co 445 Park Av NY 22 NY
Nichols Wire & Aluminum Co Davenport Ia
Pennwoven Inc 70 E 45th St NY 17 NY
Pequot Wire Cloth Co Inc So Norwalk Conn
John A Roebling's Sons Co Trenton N J
Seneca Wire & Mfg Co Fostoria O
Wickwire Bros Inc Cortland N Y p.254
Wickwire Spencer Steel A Div of The Colorado Fuel & Iron Corp 500 Fifth Av New York 18 N Y

SCREEN WIRE—plastic

Chicopee Mfg Corp Lumite Div 47 Worth St New York 13 N Y p.603
E I du Pont de Nemours & Co Inc Wilmington 98 Del
Firestone Industrial Products Co Pottstown Pa p.231
The Visking Corp Pierce Plastic Div 6733 W 65th St Chicago 38 Ill

SCREENS—door & window, metal frame

A B C Steel Equip Co Inc 205-215 E 22nd St NY 10 NY
Adams Co Dubuque Ia
A W Barnhart Co Port Chester N Y
Beh & Co Inc 1150 Broadway N Y 1 N Y
Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Cole Mfg Co PO Box 2657 Memphis 2 Tenn p.192
Compo-Miracle Products Co Berkley Mich
Continental Screen Co 1249 Washington Blvd Detroit 26 Mich p.136
W J Dennis & Co 4444 W Irving Park Chgo Ill p.142
Hope's Windows Inc Jamestown NY
Ingersoll Steel Div Borg Warner Corp 310 S Michigan Av Chgo 4 Ill
Johnson Metal Products Co Erie Pa
Kane Mfg Corp Kane Pa
Kewanee Mfg Co 448 Burlington St Kewanee Ill p.105
Mesker Bros Sales Div 4344 Geraldine St St Louis Mo p.172-173
Metalcraft Co Boston 20 Mass
New Monarch Mach & Stamping Co Des Moines Ia
Rudiger-Lang Co 8th & Carlton Sts Berkeley 10 Calif (window only)
Security Sash & Screen Co 1757 Puritan Av Detroit 3 Mich p.190
Steelcraft Mfg Co 9050 Blue Ash Rd Rossmoyne Ohio
Universal Fabricators 1801 Boone Av Bronx 60 N Y

SCREENS—door & window, wood frame

American Sash & Door Co Kan City Mo
Angel Novelty Co Fitchburg Mass
A W Barnhart Co Port Chester N Y
Bradley Miller & Co Bay City Mich
Carr Adams & Collier Co Dubuque Ia p.147
Cole Mfg Co Memphis Tenn p.192
Continental Screen Co 1249 Washington Blvd Detroit 26 Mich p.136
Crossett Lbr Co Crossett Ark
Curtis Cos Inc Clinton Ia
W P Dennis & Co 4444 W Irving Park Chgo Ill p.142
Farley & Loetscher Mfg Co Dubuque Iowa
Fordyce Lumber Co Fordyce Ark p.313
Gen'l Woodcraft Co Inc North Bergen N J
A D Hemphill Co 114 Franklin St Lake City Minn
Huttig Mfg Co Box AL Muscatine Ia p.171
Huttig Sash & Door Co 1206 Vandeventor Av St Louis 10 Mo
Ideal Co Box 889 Waco Tex
The Long-Bell Lumber Co R A Long Bldg Kansas City 6 Mo & Longview Wash
Marquart Millwork Co Oshkosh Wis p.148
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
National Screen Co Inc Suffolk Va (Window Screen Frames, K.D.)
National Screen Door Co Montgomery 3 Ala
New York Wire Cloth Co 445 Park Av NY 22 NY
Northwest Door & Plywood Sales Tacoma 1 Wash
Pacific Mutual Door Co Tacoma Wash
Phenix Mfg Co 4129 N Port Washington Rd Milwaukee 12 Wis p.411
Rock Island Sash & Door Wks Rock Island Ill
F E Schumacher Co Hartville O
Segelke & Kohlhaus Co La Crosse Wis
Frank C Snedaker & Co Inc Philadelphia 40 Pa

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West Coast Screen Co 1127 E 63rd St Los Angeles 1 Cal
Wheeling Corrugating Co Wheeling W Va p.441
White Pine Sash Co Spokane 7 Wash

SCREENS—electric for doors & windows

Detjen Corp 303 W 42nd St New York 18 N Y
Electric Fly Screen Co Inc Lindenhurst L I N Y
Electro-Static Mfg Co Niles Mich
Gardner Mfg Co Horicon Wis
Harvard Electric Co 2608 W Flournoy Chgo Ill
National Electric Fly Screen Co Inc 303 W 42nd St NY 18 NY

SCREENS—fireplace

Adams Co Dubuque Ia
A W Barnhart Co Port Chester N Y
Bennett-Ireland 449 Pine St Norwich N Y p.386
Chattanooga Implement & Mfg Co Chattanooga 6 Tenn
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
S M Howes Inc P O Box 1 Fall River Mass
Littlestown Hdw & Fdry Co Littlestown Pa
Sheffield Mfg Co 119 W 25 NY NY
F P Smith Wire & Iron Wks Inc 2346 N Clybourn Av Chicago 14 Ill
John P Smith Co New Haven Conn
Shepler Mfg Co 1312 Sheffield St Pittsburg 12 Pa
Superior Fireplace Co 1709-D East 15th St Los Angeles 21 Calif and 601-X North Point Road Baltimore 6 Md p.385
Wickwire Spencer Steel A Division of Colorado Fuel & Iron Corp 500 5th Av NY 18 NY

SCREENS—rolling window

A W Barnhart Co Port Chester N Y
Kane Mfg Corp Kane Pa
Keystone Wire Cloth Co Dept 28 Hanover Penn p.246
Metalcraft Co Boston 20 Mass
Rudiger-Lang Co 8th & Carlton Sts Berkeley 10 Calif
Roiscreen Co Pella Ia
Universal Roller Screen Co 2055 N Racine Av Chgo Ill

SCREENS—sun deflector

Flex-O-Glass Inc 1100 N Cicero Av Chgo 51 Ill p.2
Ingersoll Steel Div Borg Warner Corp 310 S Michigan Av Chgo 4 Ill
Kane Mfg Corp Kane Pa
Warp Bros 1100 N Cicero Av Chgo 51 Ill p.2

SCREW DRIVERS

American Swiss File & Tool Co Elizabeth N J
Bonney Forge & Tool Wks Allentown Pa
Bridgeport Hdw Mfg Co Bridgeport 5 Conn
Cornwell Quality Tools Co Mogadore O
Crescent Tool Co Jamestown N Y
Damascus Steel Prod Corp Rockford Ill
Fairmont Tool & Forging Co 10611 Quincy Av Cleveland Ohio
H J Harrold Tool Co Columbiana O
Mall Tool Co 7733 S Chicago Av Chgo 19 Ill
Mayhew Steel Prods Inc Shelburne Falls Mass
Mephisto Tool Co Inc Hudson NY
Millers Falls Co Greenfield Mass
North Bros Mfg Co Philadelphia Pa
Owatonna Tool Co Owatonna Minn
Ox-Wall Tool Co 928 Broadway New York 10 N Y
P & C Hand Forged Tool Co Portland 2 Ore
Peck Stow & Wilcox Co Southington Conn
Plomb Tool Co 2209 Santa Fe Av Los Angeles 54 Calif
Rainey-Tools Grove City Pa
Reed & Prince Mfg Co Worcester 1 Mass (recessed heads)
The Stanley Wks New Britain Conn p.253
Union Hdwe Co Torrington Conn
Vlchek Tool Co Cleveland O
Wilde Drop Forge & Tool Co Inc Kansas City Mo

SCREW DRIVERS—portable electric

Black & Decker Mfg Co Towson Md
Chicago Pneumatic Tool Co 6 E 44 NY NY
Independent Pneumatic Tool Co Aurora Ill
Mall Tool Co 7733 South, Chicago Av Chicago 19 Ill
Millers Falls Co Greenfield Mass
Milwaukee Electric Tool Corp 5360 W State St Milwaukee 8 Wis
Stanley Electric Tools 111 Elm New Britain Conn p.253
U S Electrical Tool Co Cincinnati 14 O

SCREW DRIVERS—ratchet

American Swiss File & Tool Co Elizabeth N J
Grenlee Tool Co 2136 12th St Rockford Ill
Millers Falls Co Greenfield Mass
Ox-Wall Tool Co 928 Broadway New York 10 N Y

SCREWS—brass & bronze

American Screw Co Providence R I
Atlas Bolt & Screw Co Cleveland O
Bridgeport Brass Co Bridgeport Conn
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Continental Screw Co New Bedford Mass
Curtis Screw Co Inc Buffalo N Y
The Eagle Lock Co Terryville Conn p.232-233
Elco Tool & Screw Corp 1800 Broadway Rockford Ill
The Lamson & Sessions Co Cleveland 2 Ohio
Natl Acme Co Cleveland O
National Lock Co Rockford Ill p.237
National Screw & Mfg Co Cleveland 4 O
S Parker Hdwe Mfg Corp 27 Ludlow St NY 2 NY
Pheoll Mfg Co 5700 Roosevelt Rd Chgo 50 Ill
Rockford Screw Products Co 2501 9th St Rockford Ill
St Louis Screw & Bolt Co 6900 N Broadway St Louis 15 Mo
Stronghold Screw Products Inc 222 W Hubbard St Chicago 10 Ill
United Screw & Bolt Corp Cleveland 2 O

SCREWS—wood

American Screw Co Providence R I
Atlantic Screw Works Hartford Conn
J G Braun Co 615 S Paulina St Chicago 12 Ill
Continental Screw Co New Bedford Mass
Elco Tool & Screw Corp 1800 Broadway Rockford Ill
National Lock Co Rockford Ill p.237
Natl Screw & Mfg Co Cleveland O
S Parker Hdwe Mfg Corp 27 Ludlow St NY 2 NY
Pheoll Mfg Co 5700 W Roosevelt Rd Chgo 50 Ill
Reading Screw Co Norristown Pa
Rockford Screw Prods Co 2501 9th St Rockford Ill
Stronghold Screw Products Inc 222 W Hubbard St Chicago 10 Ill

SET GRATES—cast iron

The Adams Co Dubuque Iowa
Chattanooga Implement & Mfg Co E Chattanooga 6 Tenn
Sterling Foundry Co Inc Sterling Ill
Western Foundry Co 2400 S W Water Av Portland 1 Ore

SHADES—window

Aeroshade Co Waukesha Wis
Bills Venetian Blind Co 5459 Lake Park Av Chgo 15 Ill
Chas W Breneman Co 2045 Reading Rd Cincinnati 2 Ohio
Clopay Corp Cincinnati O
Columbia Mills Inc 225 5th Av NY NY
Columbus Coated Fabrics Corp 1280 N Grant Av Columbus 16 Ohio
Hough Shade Corp Janesville Wis
Raucher Mfg Co Inc Norwich Conn
Stewart Hartshorn Co 250 Fifth Av NY 1 NY
Wm Volker & Co Kansas City Mo

SHAKES—cedar, processed and hand split

Butler-McDougall Mfg Co Ltd Vancouver B C Can
Capilano Shingle Co Ltd Box 608 Vancouver B C Can
Colonial Cedar Co 600 W Nickerson St Seattle 99 Wash p.355
Jamison Lbr & Shingle Co Everett Wash
Portland Shingle Co 9036 N Denver Av Portland 3 Ore p.355
West Coast Stained Shingle Co 1118 Leary Way Seattle Wash

SHEATHING—asbestos cement

Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Celotex Corp 120 S La Salle Chgo 3 Ill p.297, 329, 369, 439
Johns-Manville Corp Box 290 22 E 40th N Y N Y p.280, 301, 347, 375
Keasbey & Mattison Co Ambler Pa p.325
National Gypsum Co Buffalo 2 N Y p.298-299
The Ruberoid Co 500 Fifth Av New York 18 N Y p.349

SHEATHING—asphalt rigid board

Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Celotex Corp 120 S La Salle Chgo 3 Ill p.297, 329, 369, 439
The Flintkote Co 30 Rockefeller Plaza NY 20 NY
Johns-Manville Corp Box 290 22 E 40th New York 16 N Y p.280, 301, 347, 375
Keystone Asphalt Products Co 43 E Ohio St Chicago 11 Ill
B F Nelson Mfg Co Minneapolis 13 Minn
Protective Papers Inc Union Ill p.354

SHEATHING—fibre board

Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Celotex Corp 120 S La Salle Chgo 3 Ill p.297, 329, 369, 439
The Flintkote Co 30 Rockefeller Plaza NY 20 NY
Homasote Co Trenton 3 N J
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Insulite Division Minnesota & Ontario Paper Co Dept AL-49 Baker Arcade Bldg Minneapolis 2 Minn p.285
Johns-Manville Corp Box 290 22 E 40th New York 16 N Y p.280, 301, 347, 375
National Gypsum Co Buffalo 2 N Y (Insulation) p.298-299
Plastergon Wallboard Co P O Box 40 Sta B Buffalo 7 N Y
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
United States Gypsum Co 300 W Adams Chgo 6 Ill p.293

SHEATHING—gypsum

Celotex Corp 120 S La Salle Chgo 3 Ill p.297, 329, 369, 439
Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
Grand Rapids Plaster Co Grand Rapids 2 Mich
Lyon Conklin & Co Baltimore 30 Md
National Gypsum Co Buffalo 2 N Y p.298-299
Schumacher Wall Board Corp South Gate Calif
United States Gypsum Co 300 W Adams Chgo 6 Ill p.293

SHEATHING—insulating

Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Barrett Div Allied Chemical & Dye Corp 40 Rector NY 6 NY p.351
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Celotex Corp 120 S La Salle Chgo 3 Ill p.297, 329, 369, 439
The Flintkote Co 30 Rockefeller Plaza New York 20 N Y
Hawaiian Cane Products Ltd Culver City Calif
Homosote Co Trenton 3 N J
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Insulite Div Minnesota & Ontario Paper Co Dept AL-49 500 Baker Arcade Bldg Minneapolis 2 Minn p.285
Johns-Manville Corp Box 290 22 E 40th St New York 16 N Y p.280, 301, 347, 375
National Gypsum Co Buffalo 2 N Y p.298-299
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
U S Mengel Plywoods Inc Box 1612 Louisville 1 Ky
United States Gypsum Co 300 W Adams St Chicago 6 Ill p.293
United States Plywood Corp 55 W 44th St NY 18 NY p.13-181, 220, 257

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SHEATHING—lumber

See lumber section beginning page 575

SHEETS—aluminum, steel, etc.

Allegheny Ludlum Steel Corp Oliver Bldg Pittsburgh 22 Pa (stainless steel)
Aluminum Co of America 1723 Gulf Bldg Pittsburgh 19 Pa p.339
Bethlehem Steel Co Bethlehem Pa (steel)
Cincinnati Sheet Metal & Roofing Co Cincinnati 2 Ohio
New Holland Metals Co Dept A-49 Mountville Pa p.353
Nichols Wire & Aluminum Co Davenport Ia
Permanente Products Co Aluminum Div Kaiser Bldg Oakland 12 Calif (aluminum only)
Reynolds Metals Co Bldg Products Div Louisville 1 Ky p.93
Rigid-Tex Corp 658 Ohio St Buffalo 3 N Y
Tennessee Coal Iron & RR Co US Steel Corp Sub Birmingham 2 Ala p.392
Wheeling Corrugating Co Wheeling W Va p.441
Youngstown Sheet & Tube Co Youngstown 1 Ohio (steel)

SHELLAC

Acme White Lead & Color Works 8250 St Aubin Av Detroit 11 Mich
E I du Pont de Nemours & Co Inc Wilmington 98 Dela
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
The Glidden Co 11001 Madison Av Cleveland 2 Ohio
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
Pittsburgh Plate Glass Co Pittsburgh 22 Pa p.209
Valentine & Co Inc 11 E 36 New York 16 N Y
Woodfinishing Products Co 34 Industrial St N Y 61 N Y
William Zinseer & Co Inc 516 W 59th St New York 19 N Y

SHELVING—adjustable shelf

The Adams Co Dubuque Iowa
A G Busch & Co Inc 2632 N Central Av Chgo 39 Ill
W C Heller & Co Cat #40A 1050 Bryant St Montpelier O p.468
Knape & Vogt Mfg Co 658 Richmond St N W Grand Rapids 4 Mich

SHELVING—glass

W C Heller & Co Cat #40A 1050 Bryant St Montpelier O p.468
Toledo Plate & Window Glass Co 1041 Utica St Toledo 2 Ohio

SHELVING—steel

The Adams Co Dubuque Iowa
Deluxe Metal Furniture Co Warren Pa
Excel Metal Cabinet Co Jamestown NY
Frick-Gallagher Mfg Co Wellston O
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Interlock Metal Units Inc 50 Cliff NY NY
Johnson Metal Products Co Erie Pa
Lyon Metal Prods Inc Aurora Ill
Republic Steel Corp Berger Mfg Div Canton 5 Ohio

SHELVING—wood

Carr & Moehl Co Des Moines 9 Iowa
Cole Mfg Co PO Box 2657 Memphis 2 Tenn p.192
Craig Wood Products Co 1029 Talbotton Road Columbus Ga p.190
Engineered Plywood Products Co P O Box 1326 Tacoma Wash (plywood)
W C Heller & Co Cat #40A 1050 Bryant St Montpelier O p.468
Edward Hines Lumber Co Chicago 2 Ill p.14
Kinzua Pine Mills Co Kinzua Ore p.17
M & M Wood Working Co Resnprest Div 2301 N Columbia Portland 3 Ore
Mauk-Seattle Lbr Co Skinner Bldg Seattle 1 Wash p.81
Geo Silbernagel & Sons Co Wausaw Wis
Willamette Valley Lbr Co Dallas Ore
Wilmac Metal Products 2632 N Central Av Chgo 39 Ill p.79

SHIELDS—expansion bolt

Arro Expansion Bolt Co Box 388 Marion Ohio
Barrett Sales Co 2612 W Barry Av Chgo Ill
Chicago Expansion Bolt Co 1338 W Concord Place Chicago 22 Ill
Diamond Expansion Bolt Co Garwood N J
Paine Co 2951 Carroll Av Chgo 12 Ill
U S Expansion Bolt Co York Pa

SHINGLES—asbestos cement

Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 O p.336
Celotex Corp 120 S La Salle Chgo 3 Ill p.297, 329, 369, 439
Flintkote Co 30 Rockefeller Plaza NY 20 NY
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Johns-Manville Corp Box 290 22 E 40th New York 16 N Y p.280, 301, 347, 375
Keasbey & Mattison Co Ambler Pa p.325
The Ruberoid Co 500 Fifth Av N Y 18 N Y p.349

SHINGLES—asphalt

American Asphalt Roof Corp 7600 E 15th St Kansas City 3 Mo
Asphalt Roofing Industry Bureau 2 West 45th St NY 19 NY
Barrett Div Allied Chemical & Dye Corp 40 Rector N Y 6 N Y p.351
Bird & Son Inc East Walpole Mass p.333, 356
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 O p.336
Certain-teed Prod Corp 120 E Lancaster Av Ardmore Pa
Dyke Bros Little Rock Ark p.192
Flintkote Co 30 Rockefeller Plaza N Y 20 N Y
Ford Roofing Products Co 111 W Washington Chgo 2 Ill
Globe Roofing Prod Co Inc Whiting Ind
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Johns-Manville Corp Box 290 22 E 40th New York 16 N Y p.280, 301, 347, 375
Logan-Long Co 37 W Van Buren St Chicago 5 Ill
B F Nelson Mfg Co Minneapolis Minn
The Paraffine Companies Inc 475 Brannan St San Francisco 19 Cal
The Ruberoid Co 500 Fifth Av NY 18 NY p.349
Tamko Asphalt Products Inc Joplin Mo
The Texas Co 135 E 42 NY NY p.343

SHINGLES—galvanized steel

Allen Steel Products 12911 Hillview Detroit 27 Mich
Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Cincinnati Sheet Metal & Roofing Co Cincinnati 2 Ohio
The Edwards Mfg Co 427 Culvert Cincinnati
LaCrosse Steel Roofing & Corrugating Co LaCrosse Wis
Northwest Metal Prod Inc Seattle 4 Wash
Southern States Iron Roofing Co Savannah Ga
Wheeling Corrugating Co Wheeling W Va p.441

SHINGLES—red cedar

Acme Shingle Co Ltd 8961 Shaughnessy Vancouver B C Canada
S A Agnew Lbr Co Centralia Wash
Aloha Lbr Co Aloha Wash
Bestwood Cedar Shingle Co Ltd Barnet B C
Bloedel Stewart & Welch Ltd Vancouver B C
Butler McDougall Mfg Co Ltd Vancouver B C
Canadian Western Lbr Co Ltd Fraser Mills B C
Capilano Shingle Co Ltd Vancouver B C
Joseph Chew Shingle Co Ltd Vancouver B C
A F Coats Lbr Co Tillamook Ore
Colonial Cedar Co 600 W Nickerson St Seattle 99 Wash p.355
Cook County Lbr Co 130th at Indiana Av Chgo 28 Ill p.69
Creo-Dipt Co Inc North Tonawanda N Y p.345
Crescent Shingle Co Kelso Wash
Davis Sales Agency Seattle 11 Wash
Eatonville Lbr Co Eatonville Wash
Fluhrer Bros Astoria Ore
Gilfillan Shingle Co Kernville Ore
Gray Lbr & Shingle Co Seattle Wash
Robert Gray Shingle Co Hoquiam Wash
Hammond Cedar Co Ltd Hammond B C
Homalko Logging Co Ltd Vancouver B C
Horne Bros Shingle Co Ltd No Vancouver B C
Horton Cedar Mfg Co Ltd Victoria B C
Wm Hulbert Mill Co Everett Wash
Hunting-Merritt Shingle Co Ltd Vancouver B C
Jamison Lbr & Shingle Co Everett Wash
Thomas Kirkpatrick Estate Vancouver B C
Lake Stevens Shingle Co Granite Falls Wash
Leybold-Smith Shingle Co Tacoma Wash
Mackie Mill Co Markham Wash
Marona Mill Co Acme Wash
Mauk-Seattle Lbr Co Skinner Bldg Seattle 1 Wash p.81
McCarter Shingle Co 2418 Rock Bay Av Victoria BC Canada
Robt McNair Shingle Co Ltd Vancouver B C
Midwest Jobbers Inc 3300-3308 S Racine Av Chgo 8 Ill p.69
Miller & Sons Glacier Star Route Bellingham Wash
Newberg Shingle Co Lacomb Ore
Northwest Cedar Products Ltd Foot of Kerr Rd Vancouver B C
Pacific Timber Co Everett Wash
Peters Shingle Co Chehalis Wash
Phoenix Shingle Co Seattle Wash
Pioneer Shingle Co Anacortes Wash
Polson Lbr & Shingle Mills Hoquiam Wash
Portland Shingle Co 9030 N Denver Av Portland 3 Ore p.355
Quality Shingle Co Edmonds Wash
Rainier Mill Co Rainier Ore
Red Cedar Shingle Bureau 5508 White Bldg Seattle 1 Wash p.352
Riverside Shingle Mills Ltd New Westminster B C
Saginaw Shingle Co Aberdeen Wash
Seattle Cedar Lbr Mfg Co Seattle Wash
Geo J Silbernagel S S Michigan Av Chicago 8 Ill p.31
Skalley-Setright Shingle Co Everett Wash
M R Smith Lumber & Shingle Co White Henry Stuart Bldg Seattle Wash
Stave Lake Cedar Ltd Dewdney B C
Thurston-Flavelle Ltd Port Moody B C p.80
Twin Harbors Lbr Co Aberdeen Wash p.35
Washington Shingle Co Anacortes Wash
Weatherbest Corp North Tonawanda N Y
West Coast Stained Shingle Co 1118 Leary Way Seattle Wash
Willapa Shingle Co Raymond Wash
Woods Creek Shingle Co Sedro Woolley Wash

SHINGLES—redwood

Geo J Silbernagel S S Michigan Av Chicago 3 Ill p.31
The Super Shingle Co 14th St Dock Everett Wash
Union Lumber Co 620 Market San Francisco Calif

SHINGLES—stained

American Stained Shingle Co Columbus 8 Ohio
Colonial Cedar Co 600 W Nickerson St Seattle 99 Wash p.355
Creo-Dipt Co Inc North Tonawanda N Y p.345
Davis Sales Agency Seattle 11 Wash
Dyke Bros Little Rock Ark p.192
Jamison Lbr & Shingle Co Everett Wash
Mauk-Seattle Lbr Co Skinner Bldg Seattle 1 Wash p.81
Perma Products Co 7007 Morgan Av Cleveland 4 Ohio p.327
Geo J. Silbernagel S S Michigan Av Chicago 3 Ill p.31
Weatherbest Corp No Tonawanda N Y
West Coast Stained Shingle Co 1118 Leary Way Seattle Wash
Weyerhaeuser Sales Co St Paul Minn p.62-63

SHUTTERS—window & door, wood

Anson & Gilkey Co Merrill Wis
Carr Adams & Collier Co Dubuque Ia p.147
Cole Mfg Co Memphis Tenn p.192
Curtis Companies Inc Clinton Ia
Gregg & Son Nashua N H p.158-159
Huttig Sash & Door Co St Louis Mo
Marquart Millwork Co Oshkosh Wis p.148

Number after listing indicates page on which advertisement appears

Morgan Co Oshkosh Wis
J R Quigley Co Gloucester City N J
Roach & Musser Co Muscatine Ia p.101
George J Silbernagel S S Michigan Av Chicago 3 Ill p.31
West Coast Screen Co 1127 E 63rd St Los Angeles 1 Cal

SHUTTERS— window & door, metal

Air Control Products Inc Coopersville Mich (steel)
The Andal Mfg Co 122 Ash St Akron 8 Ohio
Edwards Mfg Co 427 Culvert St Cincinnati 2 Ohio
Fries & Son Covington Ky (steel)
United Metal Products Inc 865 S High St Akron 11 Ohio (aluminum, window only)
The J G Wilson Corp 370 Lexington Av NY 17 NY

SIDING—aluminum clapboard

New Holland Metals Co Dept A-49 Mountville Pa p.353
Nichols Wire & Aluminum Co Davenport Ia
Permanente Products Co Aluminum Div Kaiser Bldg Oakland 12 Calif
Potts-Farrington Co 1224 Cherry St Philadelphia 7 Pa
Reynolds Metals Co Bldg Products Div 2002 S 9th St Louisville 1 Ky p.93

SIDING—asbestos cement

Asbestos Co of Texas P O Box 1082 Houston Texas p.331
Asbestos Limited Inc Millington New Jersey
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 O p.336
Celotex Corp 120 S La Salle Chgo 3 Ill p.297, 329, 369, 439
Flintkote Co 30 Rockefeller Plaza N Y 20 N Y
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Johns-Manville Corp Box 290 22 E 40th New York 16 N Y p.280, 301, 347, 375
Keasbey & Mattison Co Ambler Pa p.325
The Paraffine Companies 475 Brannan St San Francisco 19 Calif
The Ruberoid Co 500 Fifth Av NY 18 NY p.349
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

SIDING—asphalt, brick, stone pattern insulating

American Asphalt Roof Corp 7600 E 15th St Kansas City 3 Mo
Barrett Div Allied Chemical & Dye Corp 40 Rector NY 6 NY p.351
Bird & Son Inc East Walpole Mass p.333, 356
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 O p.336
Celotex Corp 120 S La Salle Chgo 3 Ill p.297, 329, 369, 439
Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
Dyke Bros Little Rock Ark p.192
The Flintkote Co 30 Rockefeller Plaza N Y 20 N Y
Ford Roofing Products Co 111 W Washington Chgo 2 Ill
Globe Roofing Products Co Inc Whiting Ind
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Jones & Brown Inc 439 6th Av Pittsburgh 19 Pa
B F Nelson Mfg Co Minneapolis 13 Minn
Plastergon Wallboard Co PO Box 40 Sta B Buffalo 7 N Y
Protective Products Co Minneapolis 5 Minn
The Ruberoid Co 500 Fifth Av NY 18 NY p.349
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

SIDING— asphalt, laminated rigid

Barrett Div Allied Chemical & Dye Corp 40 Rector NY 6 NY p.351
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 O p.336
Celotex Corp 120 S La Salle Chgo 3 Ill p.297, 329, 369, 439
Globe Roofing Products Co Inc Whiting Ind
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Keystone Asphalt Products Co 43 E Ohio St Chicago 11 Ill
Ruberoid Co 500 5th Av New York 18 NY p.349

SIDING— asphalt, mineral surfaced

American Asphalt Roof Corp 7600 E 15th St Kansas City 3 Mo
Barrett Div Allied Chemical & Dye Corp 40 Rector NY 6 NY p.351
Bird & Son Inc East Walpole Mass p.333, 356
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 O p.336
Celotex Corp 120 S LaSalle Chgo 3 Ill p.297, 329, 369, 439
Central Division Co 221 N LaSalle St Chicago 1 Ill
Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
Dyke Bros Little Rock Ark p.192
Flintkote Co 30 Rockefeller Plaza NY 20 NY
Ford Roofing Products Co 111 W Washington Chgo 2 Ill
Globe Roofing Products Co Inc Whiting Ind
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Johns-Manville Corp Box 290 22 E 40th New York 16 N Y p.280, 301, 347, 375
Jones & Brown Inc 439 6th Av Pittsburgh 19 Pa
The Lehon Co 4425 S Oakley Chgo 9 Ill
Logan-Long Co 37 W Van Buren St Chicago 5 Ill
B F Nelson Mfg Co Minneapolis Minn
Protective Products Co 801 Currie Av West Minneapolis 5 Minn
The Ruberoid Co 500 Fifth Av NY 18 NY p.349
Tamko Asphalt Products Inc Joplin Mo

SIDING— asphalt, roll brick pattern

American Asphalt Roof Corp 7600 E 15th St Kansas City 3 Mo
Barrett Div Allied Chemical & Dye Corp 40 Rector NY 6 NY p.351
Bird & Son Inc East Walpole Mass p.333, 356
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 O p.336
Celotex Corp 120 S LaSalle Chgo 3 Ill p.297, 329, 369, 439
Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
The Flintkote Co 30 Rockefeller Plaza NY 20 NY
Ford Roofing Products Co 111 W Washington Chgo 2 Ill
Globe Roofing Products Co Inc Whiting Ind
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Lehon Co 4425 S Oakley Av Chgo 9 Ill
Logan-Long Co 37 W Van Buren St Chicago 5 Ill
B F Nelson Mfg Co Minneapolis Minn
The Ruberoid Co 500 Fifth Av NY 18 NY p.349
Tamko Asphalt Products Inc Joplin Mo
The Texas Co 135 E 42nd New York 17 NY p.343
Toledo Plate & Window Glass Co 1041 Utica St Toledo 2 Ohio
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

SIDING—wood

(See lumber section beginning page p.575

SIDING—steel

American Rolling Mill Co Middletown O
Bethlehem Steel Co Bethlehem Pa
Carnegie-Illinois Steel Corp US Steel Corp Sub Carnegie Bldg Pittsburgh 30 Pa
Cincinnati Sheet Metal & Roofing Co Cincinnati 2 Ohio
Columbia Steel Co Russ Bldg San Francisco 6 Cal p.392
Continental Steel Corp Kokomo Ind p.395
The Edwards Mfg Co 427 Culvert Cincinnati 2 Ohio
Fries & Son Covington Ky
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Klauer Mfg Co Dubuque Iowa
Koppers Co Inc Tar Products Div Pittsburgh 19 Pa
LaCrosse Steel Roofing & Corrugating Co La Crosse Wis
Nichols Wire & Aluminum Co Davenport Ia
Reeves Steel & Mfg Co Dover Ohio
Republic Steel Corp Republic Bldg Cleveland 1 Ohio
Tennessee Coal Iron & RR Co US Steel Corp Sub Birmingham 2 Ala p.392
Tiffin Art Metal Co Tiffin 16 Ohio
Wheeling Steel Corp Wheeling W. Va p.441

SIDING CORNERS

Allen Steel Products 12911 Hillview Detroit 27 Mich
Barrett Div Allied Chemical & Dye Corp 40 Rector NY 6 NY p.351
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
W H Fabry Mfg Co 620 S Date Av Alhambra Calif
Ford Roofing Products Co 111 W Washington Chgo 2 Ill
Jones & Brown Inc 439 6th Av Pittsburgh 19 Pa
F D Kees Mfg Co Beatrice Neb
Klauer Mfg Co Dubuque Ia
Merwin Mfg Co Erie Pa
Nichols Wire & Aluminum Co Davenport Ia (steel and aluminum)
Northwest Metal Prod Inc Seattle 4 Wash
Penn Supply & Metal Corp Philadelphia 22 Pa
Protective Products Co 801 Currie Av W Minneapolis 5 Minn
Republic Steel Corp Berger Mfg Div Canton 5 Ohio
Tiffin Art Metal Co Tiffin 16 Ohio
Wheeling Corrugating Co Wheeling W Va p.441

SIGNS

Economy Novelty & Printing Co 225 W 39th St NY 18 NY
Enamel Products Co Eddy Rd & Taft Av Cleveland 8 Ohio
Engineered Plywood Products Co PO Box 1326 Tacoma Wash (plywood)
Erco Mfg Co 2368 N Elston Av Chgo 14 Ill
General Detroit Corp 2272 E Jefferson Av Detroit 7 Mich
Reflecto Letters 411 E 101st St New York 29 N Y (reflecting lawn)
Tiffin Art Metal Co Tiffin 16 Ohio

SILO LINER PAPER

The Richkraft Co Builders Bldg Chgo 1 Ill p.341
The Sisalkraft Co Dept AL 205 W Wacker Dr Chgo 6 Ill p.335

SILOS

Arrow Tank Co Inc 16 Barrett St Buffalo 15 N Y
W E Caldwell Co Louisville 8 Ky
Craine Inc Norwich N Y
Economy Silo & Mfg Co Frederick Md
Globe Silos Unadilla N Y
Harder Silo Co Inc Cobleskill N Y
Hubbard & Co 6301 Butler St Pittsburgh 1 Pa
Independent Silo Co 752 Vandalia St Paul Minn
James Mfg Co Ft Atkinson Wis
Johnson & Carlson 848 W Eastman Chgo 22 Ill
Kalamazoo Tank & Silo Co Kalamazoo Mich
William Kelley-Lumber 735 N Water St Milwaukee 2 Wis
M & M Wood Working Co Resnpres! Div 2301 N Columbia Portland 3 Ore
Nebraska Bridge Sup & Lbr Co 40th & Leavenworth St Omaha 5 Nebr
Rowe Mfg Co Galesburg Ill
Twin City Tank Silo & Specialty Co 38th Av NE & Fifth St Minneapolis, Minn
Unadilla Silo Co Inc Unadilla N Y

SINKS—cabinet

American Central Mfg Corp Connersville Ind p.419
Boro Wood Products Co Maspeth LI NY
Coppes Inc Nappanee Ind
Curtis Cos Inc Clinton Ia
Edison Genl Elec Appliance Co Inc 5600 W Taylor Chgo Ill
Elgin Stove & Oven Div of Acme Visible Records Inc Elgin Ill
Elkay Mfg Co 1874 S 54th Av Chgo 50 Ill
Eljer Co Ford City Pa
Excel Metal Cabinet Co Inc 101 Park Av NY NY
General Electric Co Schenectady 5 N Y
General Wood Works Council Bluffs Iowa
I-XL Furniture Co Inc Goshen Ind
Just Mfg Co 4610 W 21st St Chicago 50 Ill
Lyon Metal Products Inc Aurora Ill
Midwest Mfg Co Galesburg Ill
Modern Steel Equip Co Geneva Ill
Mutschler Bros Co Napanee Ind

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Paragon Utilities Corp 50 Van Dam St Brooklyn 22 N Y
The Parsons Co Detroit 3 Mich
Republic Steel Corp Cleveland 1 Ohio
United Metal Box Co 168—7th Brooklyn N Y
Youngstown Pressed Steel Kitchens Youngstown O

SINKS—vitreous porcelain enameled

Abingdon Potteries Inc Abingdon Ill (vitreous china)
American Radiator & Standard Sanitary Corp Bessemer Bldg Pittsburgh 22 Pa
Briggs Mfg Co Detroit Mich
Crane Co 836 S Michigan Av Chgo Ill
Eljer Co Ford City Pa
The Enamel Products Co Eddy Rd & Taft Av Cleveland 8 Ohio
General Ceramics Co Metuchen N J
General Porcelain Enameling & Mfg Co 2700 N Karlov Av Chgo 39 Ill
A Y McDonald Mfg Co Box 508 Dubuque Ia
Paragon Utilities Corp 50 Van Dam St Brooklyn 22 N Y
Richmond Radiator Co 19 E 47th St NY 17 NY
Roberts & Mander Corp Hatboro Pa
Universal Sanitary Mfg Co New Castle Pa

SINKS—stainless steel

Edwards Mfg Co 427 Culvert St Cincinnati 2 Ohio
Elkay Mfg Co 1874 S 54th Av Chgo 50 Ill
Enamel Products Co Eddy Rd & Taft Av Cleveland 8 Ohio
Excel Metal Cabinet Co Jamestown NY
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Just Mfg Co 4610 W 21st St Chicago 50 Ill (stainless steel)
Legion Stainless Sink Corp 40th Av & 21st Long Island City 1 N Y
Lyon Metal Products Inc Aurora Ill
Modern Steel Equip Co Geneva Ill
Mutschler Bros Co Napanee Ind
Paragon Utilities Corp 50 Van Dam St Brooklyn 22 N Y
Products-from-Sweden Inc 80 Broad St NY 4 NY p.189
Republic Steel Corp Cleveland 1 Ohio
Richmond Engineering Co Inc Richmond Va
Roberts & Mander Corp Hatboro Pa
Tracy Mfg Co 3125 Preble Av Pittsburgh 12 Pa
Zahner Mfg Co Kansas City Mo

SKYLIGHTS

Edwards Mfg Co 427 Culvert St Cincinnati 2 Ohio
Gichner Inc 418 6th St NW Washington 1 D C (custom built)
Pennsylvania Wire Glass Co Philadelphia 3 Pa
St Paul Corrugating Co St Paul 1 Minn
Stewart Iron Works Co Inc 1551 Stewart Block Cincinnati 1 Ohio
Tiffin Art Metal Co Tiffin 16 Ohio
Willis Steel Corp Galesburg Ill

SOLDERS—liquid, paste

Ensign Products Co Cleveland 5 Ohio
Lake Chemical Co 162-P N Clinton St Chgo 6 Ill p.255
Lenk Mfg Co 30 Cummington St Boston 15 Mass
Lux-Visel Inc Elkhart Ind
National Lead Co 111 Broadway New York 6 N Y
So-Lo Wks Inc Loveland O
Wayne Chemical Products Co Copeland & MCRR Detroit 17 Mich

SOLDER—silver

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa

SOLDERING FLUX

Lake Chemical Co 162-P N Clinton St Chgo 6 Ill p.255

SOOT DESTROYERS

G N Coughlan Co 29 Spring West Orange N J
The Knack Corp 556 Jefferson Ct Detroit 7 Mich
The Pioneer Mfg Co Cleveland 4 Ohio
Saginaw Salt Products Co Saginaw 35 Mich
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449
Wayne Chemical Products Co Copeland & MCRR Detroit 17 Mich
Weather Seal Co Cincinnati 2 Ohio

SPONGES

American Sponge & Chamois Co Inc 47 Ann St NY NY
Atlantic Sponge & Chamois Corp 49 Walker New York 13 N Y
E. I. du Pont de Nemours & Co Inc Wilmington 98 Del (cellulose)
H L Ettman Sponge Co 1908 Olive St St Louis 3 Mo
Florida Sponge & Chamois Co 42 Cliff New York 7 N Y
Greek-American Sponge Co 158 N Franklin St Chicago 6 Ill
Nassau Sponge Co 124 W Kinzie Chgo 10 Ill
Pittsburgh Plate Glass Co Baltimore 29 Md p.209
James H Rhodes & Co 157 W Hubbard St Chicago 10 Ill
Robinson Sponge Co 1805 Atlantic Av Brooklyn 33 NY
Schroeder & Tremayne Inc 1711 Delmar Blvd St Louis 3 Mo
Tamms Silica Co 228 N La Salle Chgo 1 Ill (rubber) p.449

SPRAY—stock

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
Agkem Inc Quincy Ill
Chemical Supply Co 225 Plymouth Bldg Cleveland 15 Ohio
Pennsylvania Salt Mfg Co Philadelphia Pa
Puritan Chemical Co Atlanta 3 Ga
Sherwin-Williams Co Cleveland O
D B Smith & Co Inc 406 Main St Utica 2 N Y p.489
Standard Oil Co of Ind 910 S Michigan Av Chgo Ill

SPRAYERS—insecticide, garden, lawn

John H Graham & Co Inc 105 Duane St New York 8 N Y
H D Hudson Mfg Co Dept D-16 589 E Illinois St Chicago 11 Ill
Lowell Mfg Co Dept 63 589 E Illinois St Chicago 11 Ill
Payswell Sprayer - Sellco Corporation 815 Andrus Bldg Minneapolis 2 Minn p.203
N B Spurgeon Co 20 N Wacker Dr Chicago 6 Ill

SPRINGS—door

Accurate Spring Mfg Co 3811 W Lake Chgo Ill
American Steel & Wire Co US Steel Corp Sub Rockefeller Bldg Cleveland 13 Ohio p.392
Bommer Spring Hinge Co Inc 263 Classon Av Brooklyn 5 N Y
Chicago Spring Hinge Co 1500 Carroll Av Chgo 7 Ill
Cleveland Wire Spring Co 5250 Brookpark Road Cleveland 9 Ohio
M D Hubbard Spring Co Pontiac Mich
S Parker Hdwe Mfg Corp 27 Ludlow St NY 2 NY
Sargent & Co P O Box 1940 New Haven 9 Conn
The Stanley Wks New Britain Conn p.253
Wright Products Co St Paul Park Minn

SQUARES—carpenters, steel, "T"

Brown & Sharpe Mfg Co Providence RI
Eugene Dietzgen Co 2425 N Sheffield Av Chgo Ill
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
Keuffel & Esser Co Hoboken N J
Lufkin Rule Co Saginaw Mich
McGrath-St Paul Co 242 E Fifth St St Paul 1 Minn (aluminum rafter)
Peck Stow & Wilcox Co Southington Conn
Sargent & Co P O Box 1940 New Haven 9 Conn
Southington Hardware Mfg Co Southington Conn
Stanley Tools New Britain Conn p.253
L S Starrett Co Athol Mass
Union Tool Co Orange Mass
The Wellman Products Co Cleveland 8 Ohio

SQUARES—glass cutters'

Lufkin Rule Co Saginaw Mich
Sommer & Maca Glass Machinery Co 3604 S Oakley Av Chicago 9 Ill

SQUEEGEES

De Hymel Mfg Co Ltd Pasadena Cal
W J Dennis & Co 4444 W Irving Park Chicago Ill p.142
A F Dormeyer Mfg Co 4316 N Kilpatrick Av Chgo Ill
Illinois Duster & Brush Co 1926 Webster Av Chgo 14 Ill
W E Kautenberg Co Freeport Ill
Mechanical Supplies Co 6702 Perry Av Chgo Ill
Pittsburgh Plate Glass Co Baltimore 29 Md p.209

STACKERS—automatic lumber

American Mfg Co Inc 2119 Pacific Av Tacoma 2 Wash
Broadway Machine Co Inc Middletown N Y

STAGING HORSE

Marvel Equipment Co 1183 N Main St Oshkosh Wis p.487

STAIN—concrete

Samuel Cabot Inc 2350 Oliver Bldg Boston 9 Mass
A C Horn Co 43-36 Tenth Long Island City N Y
J Lee Smith & Co Inc 19 Jacob NY NY
Pecora Paint Co Inc American & Venango Sts Philadelphia 40 Pa
Ranetite Mfg Co Inc 1917 S Broadway St Louis Mo
The Sullivan Co P O Box 2606 Memphis 2 Tenn
Tamms Silica Co 228 N La Salle Chgo 1 Ill p.449
20th Century Paint & Varnish Corp 456 Driggs Av Brooklyn 11 N Y
C K Williams & Co Easton Pa

STAIN—shingle, wood

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
Alabastine Paint Products Grand Rapids 9 Mich
American Stained Shingle Co Columbus 8 O
American Varnish Co 1136 N No Branch St Chicago 22 Ill p.205
Berry Bros Inc 211 Leib St Detroit 7 Mich
Boston Varnish Co Boston 49 Mass p.213
Breinig Brothers Inc 1st & Harrison Hoboken N J
Samuel Cabot Inc 2350 Oliver Bldg Boston 9 Mass
Colonial Cedar Co 600 W Nickerson St Seattle 99 Wash p.255
Creo-Dipt Co Inc North Tonawanda N Y p.345
Elliott Paint & Varnish Co 4525 W Fifth Av Chicago 24 Ill p.221
Felton Sibley & Co Inc 136 N 4th Philadelphia 6 Pa
Forman Ford & Co 111 S 2nd St Minneapolis 1 Minn
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland Ohio
Keystone Varnish Co 71 Otsego St Brooklyn 31 N Y
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Lowe Bros Co Dayton 2 Ohio p.217
The Martin-Senour Co 2520 S Quarry Chgo 8 Ill
Minnesota Linseed Oil Paint Co Minneapolis 15 Minn
Murphy Paint Div Interchemical Corp 224 McWhorter Newark 1 N J
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
Perma Products Co Cleveland 4 Ohio p.327
Portland Shingle Co 9036 N Denver Av Portland 3 Oregon p.355
Pratt & Lambert Inc 75 Tonawanda Buffalo 7 NY
Sargent-Gerke Co Indianapolis 6 Ind
Sherwin-Williams Co Cleveland O
Standard Industrial Products Inc Box 325 Evansville 4 Ind
West Coast Stained Shingle Co 1118 Leary Way Seattle Wash

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Vita-Var Corp 46 Albert St Newark 2 N J
Wadsworth Howland & Co 141 Federal Boston Mass
Geo D Wetherill & Co 113 Arch St Philadelphia 6 Pa
Wood Preserver Co St Louis Mo
Wood Treating Chemicals Co St Louis Mo

STAIRS—disappearing

Bessler Disappearing Stairway Co Akron O
Craig Wood Products Co 1029 Talbotton Road Columbus Ga p.190
Foldaway Stairway Co Inc 813 Seaboard St Portsmouth Va
Marschke Co 1695 N Cleveland Av St Paul 8 Minn
Minnesota Wood Specialties Inc Box 216 St Paul Park Minn p.198
Newark Ladder and Bracket Co Inc Walnut & Central Avs Clark (Rahway) N J

STAIRWAYS—steel

Decatur Iron & Steel Co Decatur Ala
J W Fiske Iron Works 78 Park Place New York 7 N Y
Home-Ola Corp 2542 Elston Av Chicago 47 Ill
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Logan Co Inc Louisville 6 Ky
Geo L Mesker Steel Corp Evansville 8 Ind
Metal Crafters Div Castone Products Co Cedar Rapids Iowa p.110
Republic Steel Corp Cleveland 1 Ohio
Richmond Engineering Co Inc Richmond 5 Va
St Paul Fdry & Mfg Co St Paul 3 Minn
F P Smith Wire & Iron Works Inc 2346 N Clybourn Av Chicago 14 Ill
Southern Wire & Iron Wks 441 Memorial Dr SE Atlanta Ga
Valley Metal Products Marseilles Ill p.135

STAIRWORK—wood

Carr Adams & Collier Co Dubuque Iowa p.147
Cole Mfg Co Box 2657 Memphis 2 Tenn p.192
Corbett Cabinet Co St Marys Pa
Farley & Loetscher Mfg Co Dubuque Iowa
Huttig Mfg Co Muscatine Ia p.171
M & M Woodworking Co Portland Ore
Marquart Millwork Co Oshkosh Wis p.148
Millwork Distributors Co 2 N Kresson St Baltimore 24 Md p.188
Morgan Co Oshkosh Wis
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
Radford & Sanders Inc Baltimore Md
The Radford Co Oshkosh Wis
Frank C Snedaker & Co Inc Philadelphia 40 Pa
Weyerhaeuser Sales Co St Paul Minn p.62-63

STAPLERS

Acme Staple Co 1643 Haddon Av Camden N J
Bostitch Inc East Greenwich R I
Brower Mfg Co Quincy Ill
Burgess Fastening Co 1220 W 9th St Cleveland 13 Ohio
Fastener Corp 860 Fletcher St Chgo 14 Ill
The E. H. Hotchkiss Co Norwalk Conn p.248
Markwell Mfg Co Inc 200 Hudson NY 13 NY

STAPLES—wire

Acme Staple Co 1643 Haddon Av Camden N J
Atlas Tack Corp Fairhaven Mass
Bethlehem Steel Co Bethlehem Pa
Bostitch Inc East Greenwich R I
Brower Mfg Co P O Box 251 Quincy Ill
Burgess Fastening Co 1220 W 9th St Cleveland 13 Ohio
Columbia Steel Co Russ Bldg San Francisco 6 Cal p.392
Continental Steel Corp Kokomo Ind p.395
Copperweld Steel Co Glassport Pa
Fastener Corp 860 Fletcher Chgo 14 Ill
Frantz Mfg Co Sterling Ill p.410
The E H Hotchkiss Co Norwalk Conn p.248
Hubbard & Co 6301 Butler St Pittsburgh 1 Pa
Independent Nail & Packing Co Bridgewater Mass
Jones & Laughlin Steel Corp Pittsburgh Pa
Keystone Steel & Wire Co Peoria Ill p.397
Markwell Mfg Co Inc 200 Hudson NY 13 NY
Mid-States Steel & Wire Co Crawfordsville Ind
National Mfg Co Sterling Ill
Natl Screw & Mfg Co Cleveland O
Nichols Wire & Aluminum Co Davenport Ia
Northwestern Steel & Wire Co Sterling Ill
Pittsburgh Steel Co Pittsburgh Pa
Republic Steel Corp Cleveland 1 Ohio
Sheffield Steel Corp Kansas City Mo
Shelton Tack Co 103 Canal Shelton Conn

STEEL FRAMING

Fries & Son Covington Ky
Great Lakes Steel Corp Stran Steel Div Detroit 26 Mich
Inland Steel Products Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446-447
Jones & Laughlin Steel Corp Pittsburgh Pa
Laclede Steel Co St Louis 1 Mo
Geo L Mesker Steel Corp Evansville Ind
Wheeling Corrugating Co Wheeling W Va p.441

STEEL WOOL

American Steel Wool Mfg Co Inc 42-24 Orchard St Long Island City 1 N Y
Brillo Mfg Co 60 John St Brooklyn 1 N Y
Eagle Steel Wool Co 6201 W 65 Chgo Ill
International Steel Wool Corp Springfield Ohio
James H Rhodes & Co 157 W Hubbard St Chgo Ill
Williams Co London O

STOKERS—coal automatic

American Engineering Co Kensington Station Philadelphia 25 Pa (underfeed spreader)
Brownell Co 321 N Findley St Dayton 1 O
Chicago Fire Brick Co 1461 N Elston Chgo 22 Ill
Chrysler Corp Airtemp Div Dayton 1 Ohio
Econ-O-Col Stoker Div of Cotta Transmission Co Rockford Ill
Erie City Iron Wks Erie Pa
Excelsior Stove & Mfg Co Quincy Ill
Fairbanks Morse & Co 600 S Michigan Av Chgo Ill
Iron Fireman Co 3170 W 106 Cleveland 11 Ohio
Kol-Master Corp Oregon Ill
Red Jacket Coal Sales Co 115 E Rich St Columbus 15 Ohio
Steel Products Engineering Co Combustioneer Div Springfield Ohio
Stokol Stoker Co Inc 2060 Northwestern Av Indianapolis 7 Ind
U S Machine Corp Lebanon Ind
Westinghouse Electric Corp 306 Fourth Av Pittsburgh 30 Pa p.430

STORE FRONTS

Brasco Mfg Co Harvey Ill
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
General Porcelain Enameling & Mfg Co 2700 N Karlov Av Chgo 39 Ill
The Kawneer Co Niles Mich
S Parker Hardware Mfg Co 27 Ludlow New York 2 N Y
Pennsylvania Wire Glass Co Philadelphia 3 Pa

STOVES—brooder

Buckeye Incubator Co Springfield O
Excelsior Stove & Mfg Co Quincy Ill
Harder Silo Co Cobleskill N Y
Queen Stove Wks Inc Albert Lea Minn

STOVES—camp, gasoline, pressure

American Gas Mach Co Box 60 Albert Lea Minn
The Coleman Co Inc Wichita 1 Kan
Excelsior Stove & Mfg Co Quincy Ill
Hamlin Metal Prod Co Inc Akron O
Prentiss Waber Prod Co Wisconsin Rapids Wis
Quad Stove Mfg Co Columbus O
Union Steel Prod Co Albion Mich

STOVES—coal

Athens Stove Wks Athens Tenn
Excelsior Stove & Mfg Co Quincy Ill
Gray & Dudley Co 2300 Clifton Rd Nashville 3 Tenn
Hart Mfg Co. 2006 No Western Pkwy Louisville 3 Ky (Cannon type)
King Stove & Range Co Sheffield Ala
Locke Stove Co 114 W 11th St Kansas City 6 Mo
Red Jacket Coal Sales Co 115 E Rich St Columbus 15 Ohio
Washington Stove Wks PO Box 919 Everett Wash

STOVES—oil

Excelsior Stove & Mfg Co Quincy Ill
Florence Stove Co Gardner Mass
A J Lindemann & Hoverson Co 601 W Cleveland Av Milwaukee 7 Wis
Prentiss Wabers Products Co Wisconsin Rapids Wis
Washington Stove Wks PO Box 919 Everett Wash

STRAIGHT EDGES

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Brown & Sharpe Mfg Co Providence R I
Eugene Dietzgen Co 2425 N Sheffield Av Chicago 14 Ill
Keuffel & Esser Co Hoboken N J
Red Devil Tools Irvington 11 N J p.10
Ridgely Trimmer Co Springfield O
Warner Mfg Co 801 16th Av SE Minneapolis 14 Minn

STRAINER—down pipe

Brown & Sharpe Mfg Co 235 Promenade St Providence 1 R I
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Republic Steel Corp Berger Mfg Div Canton 5 Ohio
U S Cistern Filter Mfg Co Bloomington Ill

STRAP APPLYING EQUIPMENT

Acme Steel Co Dept AL-49 2838 Archer Av Chgo 8 Ill p.81
Brainard Steel Co Dept 349 Warren Ohio p.95
Gerrard Steel Strapping Co (US Steel Corp Sub) 2915 W 47th St Chicago 32 Ill
Signode Steel Strapping Co 2635 N Western Av Chgo Ill

STRAPPING—steel

Acme Steel Co Dept AL-49 2838 Archer Av Chgo 8 Ill p.81
Brainard Steel Co Dept 349 Warren Ohio p.95
Gerrard Steel Strapping Co (US Steel Corp Sub) 2915 W 47th St Chicago 32 Ill
The Paine Co 2951 Carroll Av Chgo 12 Ill
John A Roebling's Sons Co Trenton N J
Signode Steel Strapping Co 2635 N Western Av Chgo Ill
The Stanley Wks New Britain Conn p.253
Tennessee Coal Iron & RR Co U S Steel Corp Sub Birmingham 2 Ala p.392

STRUCTURAL METALS

Allen Steel Products 12911 Hillview Detroit 27 Mich
Commercial Shearing & Stamping Inc 5767 W 65th St Chicago 38 Ill
Reynolds Metals Co Bldg Products Div Louisville 1 Ky p.93
St Paul Fdry & Mfg Co St Paul 3 Minn
Tennessee Coal Iron & RR Co U S Steel Corp Sub Birmingham 2 Ala p.392

STUCCO

Colorcrete Industries Inc Holland Mich
Penn Crete Products Co 20th & Lippincott Sts Philadelphia 32 Pa
The Sullivan Co P O Box 2606 Memphis 2 Tenn
U S Gypsum Co 300 West Adams Chgo 6 Ill p.293
Woodville Lime Prod Co Toledo O

STUMP PULLERS—tractor & horse drawn

Dorsey Trailers Elba Ala

Number after listing indicates page on which advertisement appears

SUNDIALS—cast bronze

Adams Co Dubuque Ia
Colonial Brass Co Middleboro Mass
Clinton Lock Co Clinton Ia
J W Fiske Iron Works 78 Park Place New York 7 N Y
Standard Bronze Co Bayonne 8 N J p.255

TABLE TOPS—drafting

Keuffel & Esser Co Hoboken N J
Frederick Post Co 155 E Ohio Chgo Ill
H E Smith Co Adrian Mich

TABLE TOPS—porcelain enameled

Enamel Prod Co Eddy Rd & Taft Av Cleveland 8 Ohio
General Porcelain Enameling & Mfg Co 2700 N Karlov Av Chgo 39 Ill
Tennessee Enamel Mfg Co Nashville Tenn
Vitreous Steel Prod Co Cleveland O

TABLE TOPS—stainless steel

Enamel Products Co Eddy Rd & Taft Av Cleveland 8 Ohio
Just Mfg Co 4610 W 21st St Chicago 50 Ill

TABLES—display

Equipto Div of Aurora Equipment Co Aurora Ill
Formica Insulation Co 4501 Spring Grove Av Cincinnati 32 Ohio
General Wood Works Council Bluffs Iowa
Grand Rapids Store Equipment Co Grand Rapids 2 Mich
W C Heller & Co Cat #40A 1050 Bryant St Montpelier O p.468
Lyon Metal Products Inc Aurora Ill
J D Warren Mfg Co Montpelier O

TABLES—kitchen

Austell Cabinet Co Austell Ga
Enamel Products Co Eddy Rd & Taft Av Cleveland 8 Ohio
General Wood Works Council Bluffs Iowa
Mutschler Bros Co Nappanee Ind
J D Warren Mfg Co Montpelier Ohio

TACKERS—automatic

Acme Staple Co 1643 Haddon Av Camden N J
Acme Steel Co Dept AL-49 2838 Archer Av Chgo 8 Ill p.81
Bostitch Inc East Greenwich R I
Burgess Fastening Co 1220 W 9th St Cleveland 13 Ohio
Fastener Corp 860 Fletcher Chgo 14 Ill
A L Hansen Mfg Co 5037 N Ravenswood Chgo Ill
Markwell Mfg Co Inc 200 Hudson NY 13 NY

TACKERS—hammer

Bostitch Inc East Greenwich R I
Burgess Fastening Co 1220 W 9th St Cleveland 13 Ohio
Fairmont Tool & Forging Co 10611 Quincy Av Cleveland Ohio
Fastener Corp 860 Fletcher Chgo 14 Ill
Markwell Mfg Co Inc 200 Hudson NY 13 NY
C S Osborne & Co Harrison N J
The Stanley Wks New Britain Conn p.253

TACKS

Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Columbia Steel Co Russ Bldg San Francisco Calif p.392
L F Grammes & Sons Inc 396 Union Allentown Pa
Hillwood Mfg Co Cleveland O
National Screw & Mfg Co Cleveland O
Shelton Tack Co 103 Canal Shelton Conn
Snell-Jones Tack Corp Brockton Mass
Tennessee Coal Iron & R R Co U S Steel Corp Sub Birmingham 2 Ala p.392
Waterbury Tack Co Inc 200 Fifth Av New York N Y

TACKS—thumb

Atlas Tack Corp Fairhaven Mass
Hampden Mfg Co Plainfield N J
Hillwood Mfg Co Cleveland O
Holland Mfg Co Baltimore Md
Robt E Miller Inc 35 Pearl NY NY
Moore Push-Pin Co Phil Pa
Superior Plastic Div Commonwealth Plastics Inc 426 N Oakley Blvd Chicago 12 Ill
Turner & Seymour Mfg Co Torrington Conn p.161
Waterbury Tack Co Inc 200 5 Av NY NY

TANKS—septic-clay

Cannelton Sewer Pipe Co Cannelton Ind
Denver Sewer Pipe & Clay Co Denver 1 Colo
W S Dickey Clay Mfg Co 922 Walnut St Kansas City 6 Mo
Evans Pipe Co Uhrichsville O
Laclede-Christy Clay Products Co St Louis Mo
Lehigh Sewer Pipe & Tile Co Fort Dodge Ia
Robinson Clay Prod Co Akron O
Sealcon Products Inc 927 Second Av S Minneapolis 2 Minn

TANKS—septic, steel

American Steel Works Kansas City 8 Mo
Beall Pipe & Tank Corp Portland Ore
Dempster Mill Mfg Co Beatrice Neb
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Eastern Connecticut Welding Corp New London Conn
Ingalls Iron Wks Co Birmingham Ala
Price Fireplace Heater & Tank Corp 93 Austin St Buffalo 7 N Y p.388-389
Richmond Engineering Co Richmond Va
Stover Steel Tank & Mfg Co Freeport Ill
Superior Fireplace Co 1709-D East 15th St Los Angeles 21 Cal and 601-X North Point Road Baltimore 6 Md p.385

TANKS—septic, wood

Arrow Tank Co Inc 16 Barrett St Buffalo 15 N Y
Fleishel Lbr Co 4243 Duncan Av St Louis 10 Mo p.58
Johnson & Carlson 848 W Eastman Chgo Ill
Pacific Lbr Co San Francisco Cal
Uniflow Mfg Co Erie Pa
U S-Challenge Co Batavia Ill
Weyerhaeuser Sales Co St Paul Minn p.62-63

TANKS—steel stock & storage

American Steel Works Kansas City 8 Mo
Beall Pipe & Tank Corp Portland Ore
Breyer Bros Whiting & Co Waupun Wis
Copco Steel & Engineering Co 14035 Grand River Av Detroit 27 Mich
Decatur Iron & Steel Co Decatur Ala
Dempster Mill Mfg Co Beatrice Neb
Farwell Ozmun Kirk & Co St Paul 1 Minn
The Heil Co 3000 W Montana St Milwaukee 1 Wis
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Kewanee Boiler Corp Kewanee Ill
R Munroe & Sons Mfg Corp Pittsburgh 22 Pa
National Tube Co US Steel Corp Sub Frick Bldg Pittsburgh 30 Pa
Oakes Mfg Co Tipton Ind
Richmond Engineering Co Inc Richmond Va
St Paul Fdry & Mfg Co St Paul 3 Minn
E F Schlichter Co Inc 16 S Broad St Philadelphia 2 Pa
Siebring Mfg Co George Ia
Stover Steel Tank & Mfg Co Freeport Ill
Wheeling Furnace Corp Martins Ferry O
Whitlock Mfg Co Hartford 2 Conn

TANKS—wood stock & storage

Arrow Tank Co 16 Barnett St Buffalo 15 N Y
Atlantic Tank Corp Bergen N J
Atlas Tank Mfg Co San Francisco Cal
Baltimore Cooperage Tank & Tower Co Baltimore Md
Breyer Bros Whiting & Co Waupun Wis
Butler Mfg Co Kansas City Mo
Dempster Mill Mfg Co Beatrice Neb
Economy Silo & Mfg Co Frederick Md
Fleishel Lbr Co 4243 Duncan Av St Louis 10 Mo p.58
Johnson & Carlson 848 W Eastman Chgo 22 Ill
M & M Wood Working Co Resnprest Div 2301 N Columbia Portland 3 Ore
New England Tank & Tower Co Everett Mass
Pacific Wood Tank Corp 461 Market St San Francisco 5 Calif
Price Fireplace Heater & Tank Corp 93 Austin St Buffalo 7 N Y p.388-389
E F Schlichter Co Inc 16 S Broad Philadelphia 2 Pa
Union Lumber Co San Francisco Cal
U S-Challenge Co 38 S Dearborn St Chgo 3 Ill

TAPE—friction

Firestone Industrial Products Co Pottstown Pa p.231
The B F Goodrich Co Akron Ohio
Goodyear Tire & Rubber Akron O
Johns-Manville Corp Box 290 22 E 40th New York 16 N Y p.280, 301, 347, 375
Passaic Rubber Co Clifton N J
Plymouth Rubber Co Inc Canton Mass
Superior Insulating Tape Co 3100 Lambdin Av St Louis 15 Mo
Union Rubber & Asbestos Co Trenton N J
United States Rubber Co 1230 6th Av New York 20 N Y

TAPE—gummed

Atlantic Gummed Paper Corp 1 Main Brooklyn 1 N Y
Nashua Gummed & Coated Paper Co Nashua N H
Wortendyke Mfg Co Richmond Va

TAPES—measuring

Chicago Steel Tape Co 7956 S Chgo Av Chgo 17 Ill
Economy Novelty & Prtg Co 225 W 39th St New York 18 N Y
John H Graham & Co Inc 105 Duane New York 8 N Y
Keuffel & Esser Co Hoboken N J
Lufkin Rule Co Saginaw Mich
Master Rule Mfg Co 817 E 136 NY NY
L S Starrett Co Athol Mass

TARPAULINS

American Tent & Awning Co 1132 Mission St San Francisco 3 Cal
The Astrup Co 2937 W 25th St Cleveland 13 O
Bemis Bro Bag Co 408 Pine St St Louis 2 Mo
Canvas Products Co 1240 So 7th St St Louis 4 Mo
Canvas Specialty Co P O Box 937 Hartford Conn
Clifton Mfg Co PO Drawer 2029 Waco Tex
Couch Bros Mfg Co East Point Ga
C R Daniels Inc 44 West NY NY
Fulton Bag & Cotton Mills Atlanta 1 Ga
The B F Goodrich Co Akron Ohio
New York Drop Cloth Mfg Co Inc 10-57 Jackson Av L I City N Y
Sisalkraft Co Dept AL 205 W Wacker Dr Chicago 6 Ill (paper) p.335
Standard Awning Co 83 Avon St Hartford 5 Conn
Wm J Stanley Co Inc 401 Broadway N Y 13 N Y
Tucker Duck & Rubber Co Ft Smith Ark
U S Tent & Awning Co 2315 W Huron Chgo Ill
Werner Canvas Prod Co 609 Bergen Brooklyn 17 N Y

TERMITE CONTROL

Abesto Mfg Corp Dept D3 Michigan City Ind p.354
E L Bruce Co Memphis Tenn p.307
Carbolineum Wood Preserving Co 508 W Highland Av Milwaukee 2 Wis
Ceraseal Chemical Corp 221 N La Salle St Chicago 1 Ill
Chapman Chemical Co 333 N Michigan Av Dept A Chicago 1 Ill
Cre-o-Tox Chemical Co Memphis Tenn
Elroy Naval Stores Co Inc Vidalia Ga
Geo C Gordon Chemical Co Kansas City 7 Mo
Haynes Products Co 4007 Farnam St Omaha 3 Nebr
Hill Termite Control Systems Memphis 1 Tenn

Number after listing indicates page on which advertisement appears

The Paraffine Companies Inc 475 Brannon St San Francisco 19 Calif
Phelan-Faust Paint Mfg Co 932 Loughborough Av St Louis 11 Mo
Protexol Corp 105 Market St Kenilworth 4 N J p.85
Quigley Co Inc 527 Fifth Av New York 17 N Y
Reilly Tar & Chemical Corp 1615 Merchants Bank Bldg Indianapolis 4 Ind
Republic Creosoting Co Merchants Bank Bldg Indianapolis 4 Ind
Rockford Paint Mfg Co Rockford Ill
The Sisalkraft Co Dept AL 205 W Wacker Dr Chgo 6 Ill p.335
The Sullivan Co P O Box 2606 Memphis 2 Tenn
Tennessee Eastman Corp Kingsport Tenn
Vaccinol Sales Co 3914 E Broadway N Little Rock Ark
Wood Treating Chemicals Co 5137 Southwest Av St Louis 10 Mo

TERNE PLATES

American Rolling Mill Co Middletown O
Bethlehem Steel Co Bethlehem Pa
Inland Steel Co 38 S Dearborn Chgo 3 Ill
Northwest Metal Prod Inc Seattle 4 Wash
Wheeling Corrugating Co Wheeling W Va p.441
Wheeling Steel Corp Wheeling W Va
Youngstown Sheet & Tube Youngstown O

THINNER—paint

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
Alabastine Paint Products Grand Rapids 9 Mich
American Marietta Co 43 E Ohio Chgo 11 Ill
American Varnish Co 1136 N No Branch St Chgo 22 Ill p.205
Berry Bros Inc 211 Leib St Detroit 7 Mich
Breinig Bros Inc Hoboken N J
Briggs Maroney Co Inc Everett 49 Mass
Ceraseal Chemical Corp 221 N LaSalle St Chicago 1 Ill
Chi-Namel Paint & Varnish Co Minneapolis Minn
Colorado Paint Co 3551 Blake St Denver 5 Colo
Devoe & Raynolds Co Inc 787 First Av N Y 17 N Y p.207
E I du Pont de Nemours & Co Inc Wilmington 98 Dela
Elroy Naval Stores Co Inc Vidalia Ga
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland O
Globe Paint Wks Inc Williamsport 5 Pa
Geo C Gordon Chemical Co Kansas City Mo
A C Horn Co 43-36 Tenth Long Island City N Y
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Lowe Bros Co Dayton 2 Ohio p.217
The Neville Co Neville Island Pittsburgh 25 Pa
Peaslee-Gaulbert Paint & Varnish Co Louisville Ky
Plastic-Kote Inc 425 Lakeside Av NW Cleveland 13 Ohio
Quigley Co Inc 527 Fifth Av New York 17 N Y
Rockford Paint Mfg Co Rockford Ill
Standard Industrial Products Inc Box 325 Evansville 4 Ind
20th Century Paint & Varnish Corp 456 Driggs Av Brooklyn 11 N Y
Woodfinishing Products Co 34 Industrial St N Y 61 N Y

THRESHOLDS—metal

Adams Co Dubuque Ia
Allen Steel Products 12911 Hillview Detroit 27 Mich
Allmetal Weatherstrip Co 229 W Ohio Chgo Ill
American Brass Co Waterbury Conn
American Mason Safety Tread Co Box 310 Lowell Mass
Ames Metal Moulding Co 227 E 144th St N Y 51 N Y
J G Braun Co 615 S Paulina St Chicago 12 Ill
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
W J Dennis & Co 4444 W Irving Park Chgo Ill p.142
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Dorbin Metal Strip Mfg Co 2408 S Cicero Av Chicago 50 Ill
Erco Mfg Co 2368 N Elston Av Chgo 14 Ill
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157, 262
Master Metal Strip Service Inc 1720 N Kilbourn Av Chicago 39 Ill
Monarch Metal Weatherstrip Corp St Louis 14 Mo
Newman Bros Inc 660 W 4th St Cincinnati 3 Ohio
S Parker Hdwe Mfg Corp 27 Ludlow St N Y 2 N Y
Protex Weatherstrip Mfg Co 4500 S Western Chgo Ill
Wooster Prod Inc Wooster O
Youngstown Manufacturing Inc Dept 1 66 S Prospect Youngstown 6 Ohio

THRESHOLDS—wood

SEE LUMBER CLASSIFICATION BEGINNING PAGE 575

TIES—bale

Bethlehem Steel Co Bethlehem Pa
Columbia Steel Co Russ Bld San Fran 6 Cal p.392
Continental Steel Corp Kokomo Ind p.395
Keystone Steel & Wire Co Peoria Ill p.397
Mid-States Steel & Wire Co Crawfordsville Ind
Nichols Wire & Aluminum Co Davenport Ia
Northwestern Steel & Wire Co Sterling Ill
Republic Steel Corp Cleveland 1 Ohio
The Stanley Wks New Britain Conn p.253
Tennessee Coal Iron & RR Co U S Steel Corp Sub Birmingham 2 Ala p.392

TIES—concrete form

Allen Steel Products 12911 Hillview Detroit 27 Mich
M & M Wire Clamp Co 983-17th Av S E Minneapolis 14 Minn
Richmond Screw Anchor Co Inc 816 Liberty Brooklyn 8 N Y
Sommer Metalcraft Corp Crawfordsville Ind
Williams Form Engineering Corp Grand Rapids 7 Mich

TIES—wall

Adams Co Dubuque Ia
Allen Steel Products 12911 Hillview Detroit 27 Mich
American Sheet Metal Wks New Orleans La
Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Bethlehem Steel Co Bethlehem Pa
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn
Copperweld Steel Co Glassport Pa
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
F D Kees Mfg Co Beatrice Nebr
Kewanee Mfg Co 448 Burlington St Kewanee Ill p.105
Merwin Mfg Co Erie Pa
National Gypsum Co Buffalo 2 N Y p.298-299
Nichols Wire & Aluminum Co Davenport Ia
Reeves Steel & Mfg Co Dover Ohio
Republic Steel Corp Berger Mfg Div Canton 5 Ohio
St Paul Corrugating Co St Paul 1 Minn
Sommer Metalcraft Corp Crawfordsville Ind
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293
Wheeling Corrugating Co Wheeling W Va p.441

TILE—board, wall

Alo-Tile Mfg Co Dept L 6351 Grand River Av Detroit 8 Mich
Arketex Ceramic Corp Brazil Ind
Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Barclay Mfg Co Inc 385 Gerard Av Bronx N Y 51 N Y
Cambridge Tile Mfg Co Cincinnati 15 O
Duratile Corp Mishawaka Ind (metal)
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Gibbs Boardtile Corp 636 N Aberdeen Chgo Ill
Gladding-McBean & Co San Francisco 3 Calif
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Insulite Division Minnesota & Ontario Paper Co Dept AL-49 500 Baker Arcade Bldg Minneapolis 2 Minn p.285
Marsh Wall Products Inc 441 Main St Dover Ohio p.283
Masonite Corp Dept AL-4 111 W Washington St Chicago 2 Ill p.287
Monarch Tile Mfg Corp 15374 Idaho Detroit 3 Mich (steel or aluminum)
National Gypsum Co Buffalo 2 N Y p.298-299
Plastergon Wallboard Co PO Box 40 Sta B Buffalo 7 N Y
Prestile Mfg Co 2860 Lincoln Av Chgo 13 Ill p.300
Roxdale Building Products Corp 2916 White Plains Road N Y 67 N Y p.291
Superior Plastics Div Commonwealth Plastics Inc 426 N Oakley Blvd Chicago 12 Ill
Superior Wall Products Co 4413 N American St Philadelphia 40 Pa p.300
Tylac Co Monticello Ill
Upson Co Lockport N Y
Wallace Mfg Co 10th & Fayette Kansas City Mo p.295
Yankee Fiber Tile Mfg Co 5035 Bellevue Detroit 11 Mich

TILE—clay, drain

Acme Brick Co Fort Worth 2 Tex
Adel Clay Products Co Des Moines Iowa
Chicago Fire Brick Co 1461 N Elston Av Chgo 22 Ill
Columbia Pipe Co Columbia S C
Denver Sewer Pipe & Clay Co Denver 1 Colo
W S Dickey Clay Mfg Co 922 Walnut St Kansas City 6 Mo
Evans Pipe Co Uhrichsville Ohio
Great Falls Brick Co Great Falls Mont
Lehigh Sewer Pipe & Tile Co Ft Dodge Ia
Pacific Clay Products 306 W Ave 26 Los Angeles 31 Calif
Sheffield Brick & Tile Co Sheffield Iowa
Streator Drain Tile Co Streator Ill
What Cheer Clay Products Co What Cheer Iowa

TILE—concrete drain

Concrete Products Corp Humboldt Iowa
Graystone Concrete Prod Co 134 Nickerson St Seattle 9 Wash

TILE—floor, asphalt

Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Johns-Manville Corp Box 290 22 E 40th New York 16 N Y p.280, 301, 347, 373
Palladium Products 6127 Cedar Av Philadelphia 43 Pa
Roxdale Bldg Products Corp 2916 White Plains Rd N Y 67 N Y p.291
Tile Tex Co Chgo Hgts Ill

TILE—floor, non-slip

American Abrasive Metals Co Irvington 11 N J
Norton Co 1 New Bond St Worcester 6 Mass
The Safe Tread Co Inc 30 Vesey New York 7 N Y

TILE—glazed

Arketex Ceramic Corp Brazil Ind
Cambridge Tile Mfg Co Cincinnati 15 O
Chicago Fire Brick Co 1461 N Elston Av Chgo 22 Ill
Denver Sewer Pipe & Clay Co Denver Colo
National Fireproofing Corp Pittsburgh Pa
What Cheer Clay Products Co What Cheer Iowa
Goodyear Tire & Rubber Co Inc Akron Ohio
Firestone Industrial Products Co Pottstown Pa p.231
Kelly-Springfield Tire Co Cumberland Md
Mansfield Tire & Rubber Co Mansfield O
Swan Rubber Co Bucyrus Ohio
United States Rubber Co 1230 6th Av New York 20 N Y

TILE—gypsum

Chicago Fire Brick Co 1461 N Elston Av Chgo 22 Ill
Sealcon Products Inc Minneapolis 3 Minn
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

TILE—hollow building

Acme Brick Co Ft Worth 2 Texas
Adel Clay Products Co Des Moines Iowa
Arketex Ceramic Corp Brazil Ind
Chicago Fire Brick Co 1461 N Elston Av Chgo 22 Ill

Number after listing indicates page on which advertisement appears

Concrete Products Corp Humboldt Iowa
Denver Sewer Pipe & Clay Co Denver Colo
Graystone Concrete Prod Co 134 Nickerson St Seattle 9 Wash
Great Falls Brick Co Great Falls Mont
National Fireproofing Corp Pittsburgh Pa
Sealcon Products Inc Minneapolis 2 Minn
Sheffield Brick & Tile Co Sheffield Iowa
Streator Drain Tile Co Streator Ill
Washington Brick & Lime Co Box 2198 Spokane 8 Wash

TILE—quarry

Adel Clay Products Co Des Moines Iowa
Arketex Ceramic Corp Brazil Ind
Ludowici-Celadon Co 104 S Michigan Av Chicago Ill
B Mifflin Hood Co Daisy Tenn
Mosaic Tile Co Zanesville Ohio
Murray Tile Co Cloverport Ky
National Tile & Mfg Co Anderson Ind
Pacific Clay Products 306 W Ave 26 Los Angeles 31 Calif
Wheeling Tile Co Wheeling W Va

TILE—rubber, floor

American Tile & Rubber Co Trenton N J
Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
The B F Goodrich Co Akron Ohio
Goodyear Tire & Rubber Co Inc Akron O
Hood Rubber Co Inc Watertown Mass
Palladium Products 6127 Cedar Av Philadelphia 43 Pa
R C A Rubber Co Akron O
Roxdale Bldg Products Corp 2916 White Plains Rd N Y 67 N Y p.291
Servicised Products Corp 6051 W 65th St Chicago 38 Ill
Wright Rubber Prod Co Racine Wis

TIMBER APPRAISERS & ESTIMATORS

Associates Inc PO Box 5254 New Orleans La
C V Clarke P O Box 1385 Jackson Miss
W D Durland & Co 4411 Carowdelet St New Orleans 15 La
Thos F Grayson Prescott 5 Ark
The James Lacey Company 231 S La Salle St Chgo 4 Ill
Lemieux Bros Inc New Orleans 12 La
James W Sewall Co Old Town Me p.82
H M Spain & Co Commerce Title Bldg Memphis Tenn

TIMBER CONNECTORS

Cleveland Steel Spec Co Inc 3765 E 91st St Cleveland 5 Ohio
Timber Engineering Co 1319 Eighteenth St NW Washington 6 D C p.135
Timber Structures Inc Portland 8 Ore

TIME CLOCKS, RECORDERS

Cincinnati Time Recorder Co 1732 Central Av Cincinnati 14 Ohio

TIRES & TUBES, truck

The Dayton Rubber Co 2342 W Riverview Av Dayton 1 Ohio
General Tire & Rubber Co Akron 9 Ohio
The B F Goodrich Co Akron Ohio

TOOLS—boring

Armstrong Bros Tool Company 300 N Francisco Av Chgo Ill
Circo Tool Co Milwaukee 3 Wis
E W Deuse Co Chester Conn
Gairing Tool Co Detroit Mich
Greenlee Tool Co 2136 12th St Rockford Ill
Mephisto Tool Co Inc Hudson N Y (auger bits)
Pratt & Whitney West Hartford Conn
The Precision Tool Co Inc P O Box 155 Brooklyn 1 N Y
The Stanley Works New Britain Conn p.253

TOOLS—carpenter

E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
Henry Disston & Sons Inc Tacony Philadelphia 35 Pa
C Drew & Co Kingston Mass
Greenlee Tool Co Rockford Ill
Leetonia Tool Co Leetonia Ohio
Marion Tool Corp Marion Ind
Mayhew Steel Products Inc Shelburne Falls Mass
McGrath-St Paul Co 242 E Fifth St St Paul 1 Minn
Millers Falls Co Greenfield Mass
Ox-Wall Tool Co 928 Broadway New York 10 N Y
Peck Stow & Wilcox Co Southington Conn
Rainey-Tool Co Grove City Pa
Sargent & Co PO Box 1940 New Haven 9 Conn
Stanley Tools New Britain Conn p.253
John Stortz & Son Inc Philadelphia 6 Pa

TOOLS—garden, lawn

American Fork & Hoe Co 1623 Euclid Av Cleveland 15 Ohio
Ames Baldwin Wyoming Co Parkersburg W Va
A B Carlson & Co 349 Woodlawn Av Aurora 9 Ill p.221
Union Fork & Hoe Co Columbus O

TOOLS—logging

American Fork & Hoe Co Cleveland 15 Ohio
American Logging Tool Co Evart Mich
American Saw Mill Machinery Co Hackettstown N Y
E C Atkins & Co 402 S Illinois St Indianapolis 9 Ind
C Drew & Co Inc Kingston Mass
Sandvik Saw & Tool Corp 47 Warren St New York 7 N Y
Skookum Co Inc Portland Ore
John Stortz & Son Inc Philadelphia 6 Pa
Young Iron Wks Seattle Wash

TOOLS—masons, plasterers

C Drew & Co Inc Kingston Mass
Mayes Bros Tool Mfg Inc Porth Austin Mich

TOOLS—painters' & paperhangers'

Atlas-Ansonia Co North Haven Conn
Collmer Bros South Bend 4 Ind
Devoe & Raynolds Co Inc 787 First Av New York 17 N Y p.207, 216
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Murray-Black Co Springfield O
Pioneer Tool Co Inc Bloomfield N J
Pittsburgh Plate Glass Co Dept D3 Baltimore Md p.212
Red Devil Tools Irvington 11 N J p.10
Ridgely Trimmer Co Springfield O
Stencil Specialty Co Jersey City N J
John Stortz & Son Inc Philadelphia 6 Pa
Warner Mfg Co 801 16th Av SE Minneapolis 14 Minn
Wendell Mfg Co 4234 N Lincoln Av Chgo 18 Ill

TOOLS—plumbers'

Armstrong Bros Tool Co 300 N Francisco Av Chgo Ill
Armstrong Mfg Co 333 Knowlton St Bridgeport 8 Conn
Baltimore Tool Works Baltimore 30 Md
Collmer Bros South Bend 4 Ind
Delaware Tool Steel Corp Wilmington 99 Del
Hood Bros Philadelphia 24 Pa
William Johnson Inc Newark N J
Leetonia Tool Co Leetonia Ohio
Mephisto Tool Co Inc Hudson N Y
P & C Hand Forged Tool Co Portland 2 Ore
Peck Stow & Wilcox Co Southington Conn
Plomb Tool Co 2209 Santa Fe Av Los Angeles 54 Calif
Rainey-Tools Grove City Pa
John Stortz & Son Inc Philadelphia 6 Pa
Wilde Drop Forge & Tool Co Kansas City 8 Mo

TOOLS—portable electric

American Floor Surfacing Mach Co 521 So St Clair St Toledo 3 Ohio p.314
Black & Decker Mfg Co Towson 4 Md
Chicago Pneumatic Tool Co 6 E 44th St New York 17 N Y
Clarke Sanding Machine Co Muskegon Mich
Heston & Anderson Div St Paul Fdry & Mfg Co 606 W Kirkwood St Fairfield Ia
Independent Pneumatic Tool Co Aurora Ill
Mall Tool Co 7733 South Chicago Av Chicago 19 Ill
Millers Falls Co Greenfield Mass
Milwaukee Electric Tool Corp 5360 W State St Milwaukee 8 Wis
Skilsaw Inc 5033 N Elston Av Chgo 30 Ill
U S Electrical Tool Co Cincinnati 14 O
Fred W Wappat Inc 159 Valley St Mayville N Y p.482

TOOLS—sheet metal workers'

W H Compton Shear Co 314 Camden St Newark 3 N J

TOOLS—split ring grooving

Timber Engineering Co 1319 Eighteenth St N W Washington 6 D C p.135

TORCHES—blow

Otto Bernz Co Rochester N Y
Cedarberg Mfg Co 545 S 4th St Minneapolis 15 Minn p.254
Detroit Torch & Mfg Co Detroit Mich
Geo W Diener Mfg Co 400 N Monticello Ave Chicago Ill
Everhot Mfg Co Maywood Ill
Hauck Mfg Co 126 10th Brooklyn N Y
Lenk Mfg Co 30-38 Summington St Boston 15 Mass
The Macleod Co 2236 Bogen St Cincinnati 22 Ohio
The Turner Brass Wks Sycamore Ill
Unique Mfg Co inc 221 Whiting Chgo Ill
P Wall Mfg Supply Co Grove City Pa

TRACTORS

Allis-Chalmers Mfg Co Tractor Div Milwaukee 1 Wis p.484
Caterpillar Tractor Co Peoria 8 Ill
International Harvester Co 180 N Michigan Chgo 1 Ill
Massey-Harris Co Racine Wis
The Oliver Corp Industrial Div 19300 Euclid Av Cleveland 17 Ohio
Elwell Parker Elec Co Cleveland Ohio

TRAILERS—commercial

Dorsey Trailers Elba Ala
Eberhard Mfg Co Div Eastern Malleable Iron Co Cleveland 4 Ohio
Fruehauf Trailer Co Detroit 32 Mich
Knox Corp Thomson Ga
W C Nabors Co Mansfield La
A Streich & Bros Co Oshkosh Wis
Trailmobile Co Cincinnati 9 Ohio
Utility Trailer Mfg Co Los Angeles 54 Calif
Wentworth & Irwin Portland Ore

TRAILERS—logging

Carter Mfg Co Memphis 2 Tenn
Dorsey Trailers Elba Ala
Fruehauf Trailer Co Detroit 32 Mich
International Harvester Co 180 N Michigan Av Chgo 1 Ill
W C Nabors Co Mansfield La
Page & Page Co 0605 S W Curry Portland 1 Ore
Pointer Willamette Co Portland Ore
A Streich & Bros Co Oshkosh Wis
Utility Trailer Mfg Co Los Angeles 54 Calif
Wentworth & Irwin Portland Ore

TRAILERS—platform industrial

Beall Pipe & Tank Corp Portland Ore
The Fairbanks Co 393 Lafayette St N Y 3 N Y
Hamilton Caster & Mfg Co Hamilton O
Howe Scale Co Rutland Vt
International Harvester Co 180 N Michigan Av Chgo 1 Ill
Lewis-Shepard Products Co 236 Walnut St Watertown 72 Mass
Mercury Mfg Co 4044 S Halsted Chgo Ill
Nutting Truck & Caster Co 2201 Division St Faribault Minn
Pointer Willamette Co Portland Ore
Service Caster & Truck Div of Domestic Industries Inc Albion Mich
A Streich & Bros Co Oshkosh Wis
Wentworth & Irwin Inc 123 NE Oregon St Portland 14 Ore
Whitehead & Kales Co Detroit Mich

TRANSITS—surveyors

Eugene Dietzgen Co 2425 N Sheffield Chgo Ill
L S Starrett Co Athol Mass

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TRAPS—steam

Crane Company 836 S Michigan Chgo Ill
C A Dunham Company 450 E Ohio Chgo Ill
Grinnell Co Providence R I
James P Marsh Corp 2073 N Southport Av Chgo 14 Ill

TREADS—stair

The Adams Co Dubuque Iowa
Alan Wood Steel Co Conshohocken Pa p.245
American Abrasive Metals Co Irvington N J
Blaw Knox Co Pittsburgh Pa
Chase Brass & Copper Co 236 Grand St Waterbury 91 Conn (brass)
Cole Mfg Co PO Box 2657 Memphis 2 Tenn p.192
Decatur Iron & Steel Co Decatur Ala
Inland Steel Co 38 S Dearborn Chgo 3 Ill
International Steel Co Evansville Ind
Logan Co Inc Louisville 6 Ky
Marquart Millwork Co Oshkosh Wis p.148
Morgan Co Oshkosh Wis
Safe Tread Co Inc 30 Vesey NY 7 NY
Western Foundry Co 2400 S W Water Av Portland 1 Ore
Wooster Products Inc Wooster Ohio (safety)
Youngstown Manufacturing Inc 66 S Prospect Youngstown 6 Ohio

TREADS—wood

SEE LUMBER CLASSIFICATION BEGINNING PAGE 575

TRELLIS—wood

Beh & Co 1150 Broadway NY 1 NY
Concord Woodworking Co Inc 457 Main St West Concord Mass
Nashotah Moulding & Mfg Co Nashotah Wis

TRIM SHAPES—extruded plastic

Extruded Plastics Inc Norwalk Conn
Irvington Varnish & Insulator Co Irvington N J
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157, 262
Marsh Wall Products Co 441 Main St Dover Ohio p.283
S Parker Hdwe Mfg Corp 27 Ludlow St N Y 2 N Y
Plastex Corp 402 Mt Vernon Av Columbus 3 Ohio
Presstite Engineering 3900 Chouteau Av St Louis 10 Mo
R D Werner Co Inc 285 Fifth Av N Y 16 N Y p.108-109
Youngstown Manufacturing Inc 66 S Prospect Youngstown 6 Ohio

TRIM SHAPES—metal

Allmetal Weatherstrip Co 229 W Ohio Chgo Ill
Aluminum Co of America 1723 Gulf Bldg Pittsburgh 19 Pa p.339
Ames Metal Moulding Co 227 E 144th St New York 51 N Y
Barclay Mfg Co Inc 385 Gerard Av Bronx N Y 51 N Y
Cambridge Tile Mfg Co Cincinnati 15 O
Ford Metal Moulding Co 329 E 45th St N Y 17 N Y
Kinkead Industries Inc 450 W Superior St Chicago 10 Ill
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157, 262
S Parker Hdwe Mfg Corp 27 Ludlow St N Y 2 N Y
Protex Weatherstrip Mfg Co 4500 S Western Chgo Ill
Samson Products Co 3219 Armitage Av Chicago 47 Ill
Standard Moulding Co Inc 33 W 42nd St New York 18 N Y
Trimedge Inc Youngstown 1 Ohio
Wollaeger Steel Corp 61 Broadway NY 6 NY p.198
Wooster Products Inc Wooster Ohio
Youngstown Manufacturing Inc 66 S Prospect Youngstown 6 Ohio

TRIM SHAPES—plastic

Chicago Wood & Plastic Products 4444 Irving Park Chicago Ill
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157, 262
Marsh Wall Products Inc 441 Main St Dover Ohio p.283
Plastex Corp 402 Mt Vernon Av Columbus 3 Ohio
Youngstown Manufacturing Inc 66 S Prospect Youngstown 6 Ohio

TRUCK BODIES

Beall Pipe & Tank Corp Portland Ore
Carter Mfg Co Memphis 2 Tenn
Farmers Lumber & Supply Co Sioux City 11 Iowa
Fruehauf Trailer Co Detroit 32 Mich
Indiana Body Co 615-621 S H St Richmond Ind
Pointer-Willamette Co Portland 5 Ore
A Streich & Bros Co Oshkosh Wis
Stoughton Cab & Body Co Stoughton Wis
Wentworth & Irwin Portland Ore

TRUCK BODIES—steel dump

Anthony Co Streator Ill
Beall Pipe & Tank Corp Portland Ore
Farmers Lumber & Supply Co Sioux City 11 Iowa
Heil Co Milwaukee Wisc
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105
Perfection Steel Body Co Galion O
Pointer-Willamette Co Portland 5 Ore

TRUCK BODIES—wood cargo

Farmers Lumber & Supply Co Sioux City 11 Iowa
Fordyce Lumber Co Fordyce Ark p.313
E S Gaynor Lbr Co Sioux City 1 Ia
Perfection Steel Body Co Galion Ohio
Pointer-Willamette Co Portland 5 Ore
A Streich & Bros Co Oshkosh Wis
Wentworth & Irwin Portland Ore

TRUCK CABS

Four Wheel Drive Auto Co Clintonville Wis
Indiana Body Co 615-621 S H St Richmond Ind
Stoughton Cab & Body Co Stoughton Wis
Wentworth & Irwin Inc 123 NE Oregon St Portland 1 Ore

TRUCKS—dry kiln

American Car & Foundry Co 30 Church NY NY
Grand Rapids Vapor Kiln Inc Grand Rapids Mich
Lewis-Shepard Products Inc 236 Walnut St Watertown 72 Mass
Moore Dry Kiln Co P O Box 4248 Jacksonville 1 Fla p.65
Perfection Dry Kiln Co Inc Jamestown N Y
Standard Dry Kiln Co Indianapolis Ind
Yale & Towne Mfg Co Phil Pa p.222, 604

TRUCKS—hand

Chattanooga Wheelbarrow Co 1311 E Main St Chattanooga 2 Tenn
Colson Corp Elyria Ohio
Equipto Div of Aurora Equipment Co Aurora Ill
Fairbanks Co 393 Lafayette NY 3 NY
Hamilton Caster & Mfg Co Hamilton O
Howe Scale Co Rutland Vt
Lewis-Shepard Products Inc 236 Walnut St Watertown 72 Mass
Nutting Truck & Caster Co 2201 Division St Faribault Minn
Morse Metal Products Co Inc 295 E 2nd St New York 9 N Y
The Sabin Machine Co 6536 Carnegie Av Cleveland 3 Ohio
Service Caster & Truck Div of Domestic Industries Inc Albion Mich
A Streich & Bros Co Oshkosh Wis
Yale & Towne Mfg Co Phil Pa p.222, 604

TRUCKS—lift

Buda Co Harvey Ill
Clark Equip Co Tructractor Div Battle Creek 40 Mich
Elwell Parker Elec Co Cleveland 14 Ohio
Erickson Power Lift Trucks Inc 1413 Marshall St N E Minneapolis 13 Minn
Gerlinger Carrier Co P O Box 338 Dallas Ore p.486
Hyster Co Portland 8 Ore & Peoria 1 Ill
Lewis-Shepard Products Inc 236 Walnut St Watertown 72 Mass
Morse Metal Products Co Inc 295 E 2nd St N Y 9 N Y
Ross Carrier Co Benton Harbor Mich p.470
Service Caster & Truck Div of Domestic Industries Inc Albion Mich
Silent Hoist & Crane Co 860 63rd Brooklyn 20 N Y p.482
Yale & Towne Mfg Co Phil Pa p.222, 604

TRUCKS—lift with crane

Elwell-Parker Elec Co Cleveland 14 O
Hyster Co Portland 8 Ore & Peoria 1 Ill
The Ross Carrier Co Benton Harbor Mich p.470
Silent Hoist & Crane Co 860 63rd Brooklyn 20 N Y p.482
Taylor Machine Works Louisville Miss

TRUCKS—mill & factory

Buda Co Harvey Ill
Chattanooga Wheelbarrow Co 1311 E Main St Chattanooga 2 Tenn
Clark Equip Co Tructractor Div Battle Creek 40 Mich
Colson Corp Elyria Ohio
Erickson Power Lift Trucks Inc 1413 Marshall St NE Minneapolis 13
Fairbanks Co 393 Lafayette NY 3 NY
Chas E Francis Co Huntington Ind
Hamilton Caster & Mfg Co Hamilton O
Howe Scale Co Rutland Vt
Nutting Truck & Caster Co 2201 Division St Faribault Minn
Orangeville Mfg Co Orangeville Pa
The Sabin Machine Co 6536 Carnegie Av Cleveland 3 Ohio
Service Caster & Truck Div of Domestic Industries Inc Albion Mich
Tucker-Dorsey Mfg Corp Indianapolis Ind
Yale & Towne Mfg Co Phil Pa p.222, 604

TRUCKS—motor

Autocar Co Ardmore Pa
Brockway Motor Co Inc Cortland N Y
Chevrolet Motor Div General Motors Corp Detroit 2 Mich p.483
Diamond T Motor Car Co 4401 W 26th St Chicago 23 Ill
Dodge Div Chrysler Corp Detroit Mich p.479
Federal Motor Truck Co Detroit Mich
Ford Motor Co Dearborn Mich
Four Wheel Drive Auto Co Clintonville Wis
General Motors Truck Co Pontiac Mich
International Harvester Co 180 N Michigan Av Chgo 1 Ill
Kenworth Motor Truck Corp Seattle 11 Wash
Mack-International Motor Truck Corp 350 5th Av NY 1 NY
Reo Motors Inc Lansing 20 Mich
Sterling Motor Truck Co Inc Milwaukee 1 Wis
Stewart Motor Corp Buffalo N Y
Studebaker Sales Corp South Bend Ind
White Motor Co Cleveland O
Willys-Overland Motors Inc Toledo O

TRUSSES—roof, steel

Allen Steel Products 12911 Hillview Detroit 27 Mich
American Bridge Co U S Steel Sub Frick Bldg Pittsburgh 19 Pa
Bethlehem Steel Co Bethlehem Pa
Decatur Iron & Steel Co Decatur Ala
Erie Steel Construction Co Erie Pa
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
International Steel Co Evansville Ind
Geo L Mesker Steel Corp Evansville Ind
Republic Steel Corp Cleveland 1 Ohio
Reynolds Metals Co Bldg Products Div Louisville 1 Ky p.93
St Paul Foundry & Mfg Co St Paul 3 Minn
Southern Wire & Iron Wks 441 Memorial Dr SE Atlanta Ga

TRUSSES—roof, wood

American Roof Truss Co 6846 Stony Island Av Chgo 49 Ill
McKeown Bros Co 5235 S Keeler Av Chicago 32 Ill
Rilco Laminated Products Inc 2680 First Natl Bank Bldg St Paul 1 Minn p.38
Roof Structures Inc 45 W 45 NY NY
Super-Structures Inc Albert Lea Minn

Number after listing indicates page on which advertisement appears

Tacoma Lumber Fabricating Co Tacoma 1 Wash
Timber Structures Inc Portland 8 Ore
Unit Structures Inc Peshtigo Wis

TUBS—laundry

Alberene Stone Corp of Virginia 419 4 Ave NY NY
Arrow Tank Co Inc 16 Barnett St Buffalo 15 N Y (wood)
General Ceramics Co Metuchen N J
Richmond Radiator Co 19 E 47th St N Y 17 N Y
Standard-Elsmere Granite Co 1754 N Spaulding Chgo Ill
Trenton Potteries Co Trenton N J

TURNBUCKLES

Arro Expansion Bolt Co Box 388 Marion O
Bethlehem Steel Co Bethlehem Pa
Commercial Shearing & Stamping Inc 5767 W 65th St Chicago 38 Ill
Fiwale Equipment Mfg Co 165 Church NY 7 NY
Hubbard & Co 6301 Butler St Pittsburgh 1 Pa
The Thomas Laughlin Co 143 Fore St Portland 6 Maine
Maine Steel Products Inc South Portland Maine
National Mfg Co Sterling Ill
Newhall Chain Forge & Iron Co 48 W Broadway N Y 7 N Y
Russell-Erwin Div The American Hdwe Corp New Britain Conn p.241
St Louis Screw & Bolt Co 6900 N Broadway St Louis 15 Mo
Sheffield Steel Corp Kansas City Mo
Upson-Walton Co Cleveland O
Wilcox Crittenden & Co Inc Middletown Conn

TURNTABLES—lumber

American Mfg Co Inc Tacoma 2 Wash
Leitelt Iron Wks Grand Rapids 2 Mich
Moore Dry Kiln Co P O Box 4248 Jacksonville 1 Fla p.65
Standard Dry Kiln Co P O Box 541 Indianapolis Ind

TURPENTINE

American Turpentine & Tar Co Ltd New Orleans La
American Turpentine Farmers Assn Cooperative Valdosta Ga p.214
Columbia Naval Stores Co Savannah Ga
Elroy Naval Stores Vidalia Ga
Wm S Gray & Co 342 Madison Av New York 17 N Y
Gum Turpentine Farmers' Cooperative Assn Vidalia Ga
Industrial Chemical Sales Div West Virginia Pulp & Paper Co New York Central Bldg NY NY
Newport Industries Inc 230 Park Av N Y 17 N Y
Southern Pine Chemical Co Div of The Glidden Co Jacksonville Fla

V BELT DRIVES

Allis-Chalmers Mfg. Co Milwaukee Wis p.484
Fairbanks Morse & Co 600 S Michigan Av Chgo Ill
The Filer & Stowell Co 147 E Becher St Milwaukee 7 Wis
Houston Blow Pipe & Sheet Mtl Wks Houston Tex p.403
Link-Belt Co 300 W Pershing Rd Chgo 9 Ill
Western Foundry Co 2400 SW Water Av Portland 1 Ore

V BELT & BELTING

Allis-Chalmers Mfg Co Milwaukee 1 Wis p.484
Broadway Rubber Mfg Co 529 E. Broadway Louisville 2 Ky
Chicago Rawhide Mfg Co 1301 N Elston Chgo Ill
Dayton Rubber Mfg Co 2342 W Riverview Av Dayton 1 Ohio
R & J Dick Co Inc Passaic N J
Durkee-Atwood Co Minneapolis Minn
Firestone Industrial Products Co Pottstown Pa p.231
Gates Rubber Co 999 S Broadway Denver 17 Colo
The B F Goodrich Co Akron Ohio
Goodyear Tire & Rubber Co Inc Akron O
Manheim Mfg & Belting Co Manheim Pa
Raybeston-Manhattan Inc Passaic N J
Republic Rubber Div Lee Rubber & Tire Corp Youngstown 1 Ohio
Rockwood Mfg Co Indianapolis Ind
Chas A Schieren Co 30-38 Ferry NY 7 NY
Thermoid Co Trenton N J
United States Rubber Co 1230 6th Av New York 20 N Y
Webb Belting & Supply Co 1501 W 12th St Kansas City 7 Mo

VALVES—dry kiln, control

Foxboro Co Foxboro Mass
Moore Dry Kiln Co P O Box 4248 Jacksonville 1 Fla p.65

VARNISH

Alabastine Paint Products Grand Rapids 9 Mich
American Varnish Co 1136 N No Branch Chgo 22 Ill p.205
Berry Bros Inc 211 Leib St Detroit 7 Mich
Boston Varnish Co Boston 49 Mass p.213
Breinig Brothers Inc 1st & Harrison Hoboken N J
Calbar Paint & Varnish Co 2612 N Martha St Philadelphia 25 Pa
Central Paint & Varnish Wks 69 Prospect Brooklyn N Y
E I du Pont de Nemours & Co Wilmington 98 Del
Elliott Paint & Varnish Co 4525 W Fifth Av Chgo 24 Ill p.221
Felton Sibley & Co Inc 136 N 4th Philadelphia 6 Pa
Forman Ford & Co 111 S 2nd St Minneapolis 1 Minn
Foy Paint Co Inc 1776 Mentor Av Cincinnati 12 Ohio
Keystone Varnish Co 71 Otsego St Brooklyn 31 N Y
Lowe Bros Co Dayton 2 Ohio p.217
John Lucas & Co Philadelphia Pa
Murphy Paint Div Interchemical Corp 224 McWhorter Newark 1 N J
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
Paraffine Companies 475 Brannan St San Francisco 19 Cal
Patterson Sargent Co Cleveland 14 O
Phelan-Faust Paint Mfg Co 932 Loughborough Av St Louis 11 Mo
Pittsburgh Plate Glass Co Pittsburgh 22 Pa p.209
Pratt & Lambert Inc 75 Tonawanda Buffalo 7 NY
Rogers Paint Products Inc Detroit 11 Mich
St Louis Surfacer & Paint Co 4200 Arlington Av St Louis 20 Mo
Sherwin-Williams Co Cleveland O
Standard Industrial Products Inc Box 325 Evansville 4 Ind
Standard Varnish Wks 2600 Richmond Terrace Staten Island 3 N Y
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
Valentine & Co Inc 11 E 36 NY 16 NY

VARNISH REMOVER

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
Alabastine Paint Products Grand Rapids 9 Mich
Berry Bros 211 Leib St Detroit 7 Mich
Boston Varnish Co Boston 49 Mass p.213
Boyle-Midway Inc 257 Cornelison Av Jersey City 2 N J p.220
Breinig Bros Inc Hoboken N J
The Dow Chemical Co Midland Mich
E I du Pont de Nemours & Co Inc Wilmington 98 Dela
Elliott Paint & Varnish Co 4525 W 5th Av Chgo 24 Ill p.221
Glidden Co Cleveland O
Industrial Chemical Development Corp 347 Madison Av New York 17 N Y
W W Lawrence & Co 1124 W Carson Pittsburgh 19 Pa
Lowe Bros Co Dayton 2 Ohio p.217
Minnesota Linseed Oil Paint Co Minneapolis 15 Minn
The O'Brien Corp Dept L-4 South Bend 21 Ind p.215
Pittsburgh Plate Glass Co Pittsburgh 22 Pa p.209
Pratt & Lambert Inc 75 Tonawanda Buffalo 7 NY
Savogran Co 25 Hunting Av Boston 16 Mass
Schalk Chemical Co 351 E Second St Los Angeles 12 Calif
Stanley Chemical Co E Berlin Conn
Steelcote Mfg Co 3418 Gratiot St St Louis 3 Mo
L M Thornton Mfg Co 2825 E 18th St Kansas City Mo
20th Century Paint & Varnish Corp 456 Driggs Av Brooklyn 11 N Y
Valentine & Co Inc 11 E 36th St New York 16 N Y
Wadsworth Howland & Co 141 Federal St Boston Mass
Woodfinishing Products Co 34 Industrial St N Y 61 N Y

VENEERS—hardwood

Aetna Plywood & Veneer Co 1732 Elston Av Chicago 22 Ill p.11
Higgins Inc New Orleans La p.317
Marsh Wall Products Inc 441 Main St Dover O p.283
Pearl City Plywood Co Inc Jamestown N Y
Weber Veneer & Plywood Co Shawano Wis

VENETIAN BLINDS

Artistic Venetian Blind Co 1955 Park Av NY NY
Bills Venetian Blind Co 5459 Lake Park Av Chicago 15 Ill
Bostwick-Goodell Co Norwalk O
Chas W Breneman Co 2045 Reading Rd Cincinnati 2 Ohio
Clark & Hammer Inc Belleville N J
Clifton Mfg Co PO Drawer 2029 Waco Tex
Columbia Mills Inc 225 5 Av NY NY
Consolidated Venetian Blind Co 2401 Nicholson St Houston 8 Tex
Crawford-Austin Mfg Co Waco Tex
Crown Shade & Screen Co Boston Mass
Ellis Venetian Blind Co 5459-69 Lake Park Av Chicago 15 Ill
Flint Venetian Blind Mfg Co Flint 5 Mich
W E Hettrick & Son Co PO Box 377 Toledo 1 Ohio
Hough Shade Corp Janesville Wis
Mackin Venetian Blind Co Momence Ill
Mars Venetian Blinds Le Mars Ia
Modern Venetian Blinds Inc 261 Fifth Av New York 16 N Y
Warren Venetian Blind Co Minneapolis 13 Minn
Yardley Venetian Blind Co 138 Parsons Av Columbus 15 Ohio

VENETIAN BLIND SLATS

Acme Steel Co Dept AL-49 2838 Archer Av Chgo 8 Ill p.81
American Rule & Block Co Menominee Mich
Bills Venetian Blind Co 5459 Lake Park Av Chgo 51 Ill
Chicago Wood & Plastic Products Co 4201 W Irving Park Chgo 41 Ill (mouldings)
Jefferson Wood Working Co Louisville Ky
G B Lewis Co Watertown Wis
S E Overton Co So Haven Mich

VENTILATORS—farm, poultry, houses, etc.

Air Control Products Inc Coopersville Mich
Air Devices Inc 17 E 42nd St New York 17 N Y
Brower Mfg Co Quincy Ill
Clay Equipment Corp Cedar Falls Ia
Diehl Mfg Co 1124 Finderne Av Somerville N J
Emerson Electric Mfg Co 2100 Florissant Av St Louis 21 Mo
Franklin Equipment Co Monticello Iowa
A D Hemphill Co 114 Franklin St Lake City Minn
H D Hudson Mfg Co Dept D-16 589 E Illinois Chgo 11 Ill
James Mfg Co Fort Atkinson Wis
Johnson Fan & Blower Corp 1319 W Lake St Chicago 7 Ill
King Company Owatonna Minn
Klauer Mfg Co Dubuque Ia
La Crosse Steel Roofing & Corrugating Co La Crosse Wis
Louden Machinery Co Fairfield Ia
Lyon Conklin & Co Baltimore 30 Md
Olson Mfg Co Albert Lea Minn
Peerless Electric Co Warren O
Republic Metals & Roofing Materials Inc 4040 W Lake Chgo 24 Ill
Starline Inc Harvard Ill
U S-Challenge Co 38 S Dearborn Chgo 3 Ill

VENTILATORS—roof

Air Control Products Inc Coopersville Mich
Air Devices Inc 17 E 42nd New York 17 N Y
American Blower Corp Detroit 32 Mich

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Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Clay Equipment Co Cedar Falls Ia
Connecticut Blower Co P O Box 884 Hartford 1 Conn
Diehl Mfg Co 1124 Finderne Av Somerville N J
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Farwell Ozmun Kirk & Co St Paul 1 Minn
Franklin Equipment Co Monticello Ia
Houston Blow Pipe & Sht Met Wks Houston Tex p.403
H D Hudson Mfg Co Dept D-16 589 E Illinois Chgo 11 Ill
Ilg Electric Ventilating Co 2550 N Pulaski Rd Chicago 41 Ill
Inland Steel Products Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446-447
James Mfg Co Fort Atkinson Wis
Johns-Manville Corp PO Box 290 22 E 40th St. New York 16 NY p.280, 301, 347, 375
Johnson Fan & Blower Corp 1319 W Lake St Chicago 7 Ill
Klauer Mfg Co Dubuque Iowa
Leslie Welding Co 2940 W Carroll Av Chgo 12 Ill p.391
Lyon Conklin & Co Baltimore 30 Md
Metalcraft Co Boston 20 Mass
Pennsylvania Wire Glass Co Philadelphia 3 Pa
Penn Supply & Metal Corp 1831 N 5th St Philadelphia 22 Pa
Republic Metals & Roofing Materials Inc 4040 W Lake Chgo 24 Ill
St Paul Corrugating Co St Paul 1 Minn
Starline Inc Harvard Ill
Swartwout Co 18568 Euclid Av Cleveland 12 Ohio
Willis Steel Corp Galesburg Ill

VENTILATORS—wall

Adams Co Dubuque Ia
Air Control Products Inc Coopersville Mich
Airmaster Corp 4317 Ravenswood Av Chicago 13 Ill
Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Chattanooga Implement & Mfg Co Chattanooga 6 Tenn
Connecticut Blower Co PO Box 884 Hartford 1 Conn
Diehl Mfg Co 1124 Finderne Av Somerville N J (electric)
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Emerson Elec Mfg Co 8100 Florissant Av St Louis 21 Mo
Farwell Ozmun Kirk & Co St Paul 1 Minn
A D Hemphill Co 114 Franklin St Lake City Minn
Hope's Windows Inc Jamestown N Y
Ilg Electric Ventilating Co 2850 N Pulaski Rd Chicago 41 Ill
James Mfg Co Fort Atkinson Wis
Johnson Fan & Blower Corp 1319 W Lake St Chicago 7 Ill
Krauser-Boyd Inc No Tonawanda N Y
Leslie Welding Co 2940 W Carroll Av Chgo 12 Ill p.391
Majestic Co 103 Erie St Huntington Ind p.90
Metalcraft Co Boston 20 Mass
Monarch Metal Weatherstrip Corp St Louis 14 Mo (glass block)
Northwest Metal Prod Inc Seattle Wash
Paasche Airbrush Co 1909 W Diversey Pkwy Chicago 14 Ill
Republic Metals & Roofing Materials Inc 4040 W Lake Chgo 24 Ill
Rilco Laminated Products Inc 2680 First Natl Bank Bldg St Paul 1 Minn p.38
F A Smith Mfg Co Inc Rochester N Y
Starline Co Harvard Ill
Trane Co La Crosse Wis
Universal Blower Co 1090 S Adams Av Birmingham Mich
Victor Elec Prod Inc Cincinnati Ohio

VENTILATORS—window

Airmaster Corp 4317 Ravenswood Av Chicago 13 Ill
A G Busch & Co Inc 2632 N Central Av Chgo 39 Ill
Champion Blower & Forge Co Lancaster Pa
Diehl Mfg Co 1124 Finderne Av Somerville N J (electric)
Emerson Electric Mfg Co 8100 Florissant Av St Louis 21 Mo
Farwell Ozmun Kirk & Co St Paul 1 Minn
The Ideal Ventilator Co 160 Atlantic Av Providence 7 R I
Ilg Electric Ventilating Co 2850 N Pulaski Rd Chicago 41 Ill
James Mfg Co Fort Atkinson Wis
Johnson Fan & Blower Corp 1319 W Lake St Chicago 7 Ill
Louden Machinery Co Fairfield Ia
National Screen Co Inc Suffolk Va
Peerless Electric Co Warren O
Phenix Mfg Co 4129 N Port Washington Rd Milwaukee 12 Wis p.411
Plymouth Stamped Metal Co Galion O
F W Prentice & Co Adrian Mich (wood frame)
Protective Ventilator Co 310 W 92 NY NY
F E Schumacher Co Hartville Ohio
Signal Elec Mfg Co Menominee Mich
Starline Inc Harvard Ill
Universal Blower Co 1090 S Adams Av Birmingham Mich
Victor Elec Prod Inc Cincinnati Ohio
Wayne Mfg Co Detroit Mich

VERMICULITE

Acme Asbestos Covering & Flooring Co 246 N Elizabeth Chgo 7 Ill
Chicago Fire Brick Co 1461 N Elston Av Chgo 22 Ill
Mission Lime Products Corp 841 Ducommun St Los Angeles 12 Cal
Zonolite Company Dept ALM-49 135 S La Salle St Chicago 3 Ill p.363

VISES

American Scale Co 919 Baltimore Av Kansas City 6 Mo (machinist utility)
Armstrong Mfg Co 333 Knowlton St Bridgeport 8 Conn
The Billings & Spencer Co Hartford 1 Conn (pipe)
Desmond-Stephan Mfg Co Urbana Ohio
Grand Specialties Co 3101 W Grand Av Chgo Ill
Millers Falls Co Greenfield Mass
Peck Stow & Wilcox Co Southington Conn
Richards-Wilcox Mfg Co Aurora Ill (woodworkers) p.249
St Paul Fdry & Mfg Co St Paul 3 Minn

WAGON BOXES—farm

Durabilt Mfg Co 604 Arnold Av Aurora Ill
Super-Structures Inc Albert Lea Minn

WAGONS—logging & lumber

Electric Wheel Co Quincy Ill
Knox Corp Thomson Ga
Lindsey Wagon Co Laurel Miss
Pointer-Willamette Co Portland 5 Ore
A Streich & Bros Co Oshkosh Wis
Wadsworth & Irwin Inc 123 NE Oregon St Portland 14 Ore

WALLBOARD—fiber insulating

Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Celotex Corp 120 S LaSalle Chgo 3 Ill p.297, 329, 369, 439
Cole Mfg Co P O Box 2657 Memphis 2 Tenn p.192
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Fir-Tex Porter Bldg Portland 4 Ore
Flintkote Co 30 Rockefeller Plaza NY 20 N Y
Hawaiian Cane Products Ltd Culver City Calif
Homasote Co Trenton N J
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Insulite Div Minnesota & Ontario Paper Co Dept AL-49 500 Baker Arcade Bldg Minneapolis 2 Minn p.285
Johns-Manville Corp PO Box 290 22 E 40th New York 16 NY p.280, 301, 347, 375
Masonite Corp Dept AL-4 111 W Washington St Chicago 2 Ill p.287
National Gypsum Co Buffalo 2 N Y p.298-299
Plastergon Wallboard Co PO Box 40 Sta B Buffalo 7 N Y
Simpson Logging Co 1010 White Bldg Seattle 1 Wash
U S Gypsum Co 300 W Adams St Chicago 6 Ill p.293
Upson Co Lockport NY
Wood Conversion Co Dept 120-49 First Natl Bank Bldg St Paul 1 Minn p.372-373

WALLBOARD—gypsum

Celotex Corp 120 S LaSalle Chgo 3 Ill p.297, 329, 369, 439
Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa (plain & woodgrain finish)
Grand Rapids Plaster Co Grand Rapids 2 Mich
National Gypsum Co Buffalo 2 N Y p.298-299
Pacific Portland Cement Co San Francisco 6 Cal
The Paraffine Companies Inc 475 Brannan St San Francisco 19 Cal
Schumacher Wall Board Corp South Gate Cal
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

WALLBOARD—marble finish

Gibbs Boardtile Corp 636 N Aberdeen Chgo Ill
Marsh Wall Products Inc 441 Main St Dover Ohio p.283

WALLBOARD—paper

Bird & Son Inc East Walpole Mass p.333, 356
Certain-teed Products Corp 120 E Lancaster Av Ardmore Pa
Cornell Wood Products Co 230 N Michigan Av Chgo 1 Ill
Fleming & Sons Inc Dallas Tex
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60

WALLBOARD—tiled

Armstrong Cork Co 4704 Ross St Lancaster Pa p.288-289
Barclay Mfg Co 385 Gerard Av Bronx NY
Cornell Wood Products Co 230 N Michigan Av Chgo 1 Ill
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Gibbs Boardtile Corp 636 N Aberdeen Chgo Ill
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Johns-Manville Corp PO Box 290 22 E 40th New York 16 NY p.280, 301, 347, 375
Marsh Wall Products Inc 441 Main St Dover Ohio p.283
National Gypsum Co Buffalo 2 N Y p.298-299
Plastergon Wallboard Co PO Box 40 Sta B Buffalo 7 N Y
Superior Wall Products Co 4413 N American St Philadelphia 40 Pa p.300
Tylac Co Monticello Ill
The Tyle-Bord Co Inc 700 Mercer St Seattle 9 Wash
Upson Co Lockport N Y
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

WALLBOARD—woodgrain finish

Formica Insulation Co 4501 Spring Grove Av Cincinnati 32 Ohio
Gibbs Boardtile Corp 636 N Aberdeen Chgo Ill
Homasote Co Trenton N J
Indianapolis Plywood Corp 1300 Beecher St Indianapolis 7 Ind p.60
Keystone Asphalt Products Co 43 E Ohio St Chicago 11 Ill
Marsh Wall Products Inc 441 Main St Dover Ohio p.283
National Gypsum Co Buffalo 2 N Y p.298-299
U S Gypsum Co 300 W Adams Chgo 6 Ill p.293

WALL COPING

Chicago Fire Brick Co 1461 N Elston Av Chgo 22 Ill
Clay City Pipe Co Uhrichsville Ohio
Denver Sewer Pipe & Clay Co Denver 1 Colo
W S Dickey Clay Mfg Co 922 Walnut St Kansas City 6 Mo
Evans Pipe Co Uhrichsville Ohio
Laclede-Christy Clay Prod Co St Louis Mo
Lehigh Sewer Pipe & Tile Co Ft Dodge Ia
Robinson Clay Prod Co Akron O
Sealcon Products Inc Minneapolis 1 Minn
Streator Drain Tile Co Streator Ill
Washington Brick & Lime Co Box 2198 Spokane 8 Wash
What Cheer Clay Prod Co What Cheer Ia

WALL SIZE

Alabastine Paint Prod Grand Rapids Mich
The Borden Co Chemical Div 350 Madison Av NY 17 NY
Chi-Namel Paint & Varnish Co Minneapolis Minn
Cleveland Cleaner & Paste Co Cleveland 2 Ohio
Consumers Glue Co St Louis 6 Mo
Crescent Products Co Terre Haute Ind

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Elliott Paint & Varnish Co 4525 W 5th Av Chgo 24 Ill p.221
Farwell Ozmun Kirk & Co St Paul 1 Minn
H B Fuller Co 255 Engle St St Paul 2 Minn
The Glidden Co 11001 Madison Av Cleveland 2 Ohio
Harrison Paint & Varnish Co 1329 Harrison Av S W Canton 1 O
Lowe Bros Co Dayton 2 Ohio p.217
Miner-Hillard Milling Co Wilkes Barre Pa
Muralo Co Inc 572 Richmond Terrace Staten Island 1 N Y
Placo Div Paisley Products Inc 718 Washington Av North Minneapolis Minn
Pyramid Process Co Inc East Rochester N Y
Reardon Co St Louis Mo p.218-219
Reliable Paste Co 3560 Shields Av Chgo 9 Ill
Standard Industrial Products Inc Box 325 Evansville 4 Ind
Truscon Laboratories Detroit Mich
Vita-Var Corp 46 Albert St Newark 2 N J
Wesco Waterpaints Inc East Boston Mass

WALLPAPER

The Birge Co Inc 390 Niagara St. Buffalo 1 NY
Buffalo Wallcraft Co Inc P O Box 54 Station B Buffalo 7 N Y
Century Wallpaper Mills Decatur Ill
Fleming & Sons Inc Dallas Tex
Imperial Paper & Color Corp Glens Falls NY
Lennon Wallpaper Co Joliet Ill
Plattsburgh Wallpaper Co Plattsburgh N Y
Prager Co Worcester Mass
Stamford Wallpaper Co Stamford Conn
Standard Coated Products Div of Interchemical Corp 350 Fifth Av NY 1 NY
Star-Peerless Wallpaper Mills Joliet Ill
Statter Wallpaper Mills Crystal Lake Ill
Trimz Co Inc Merchandise Mart Chgo Ill (ready pasted)
United Wallpaper Factories Inc 3330 Fillmore Chgo Ill

WALLPAPER REMOVERS

Commercial Paste Co Buttles at Michigan Columbus 8 Ohio
The Glidden Co 11001 Madison Av Cleveland 2 Ohio
Patent Cereals Co Geneva N Y
Pyramid Process Co Inc East Rochester N Y
Reliable Paste Co 3560 Shields Av Chgo 9 Ill
Schalk Chemical Co 351 E Second St Los Angeles 12 Calif
N B Spurgeon Co 20 N Wacker Dr Chicago 6 Ill
Tamms Silica Co 228 N LaSalle St Chgo 1 Ill p.449
Warner Mfg Co Minneapolis 14 Minn (steam)

WAREHOUSING—field

W S Dickey Clay Mfg Co 922 Walnut St Kansas City 6 Mo
Douglas-Guardian Warehouse Corp 118 N Front New Orleans 1 La
Evans Pipe Co Uhrichsville Ohio
Lawrence Warehouse Co W P Story Bldg Los Angeles Calif
St Louis Terminal Warehouse Co St Louis Mo

WATERPROOFING—asphalt

American Asphalt Roof Corp 7600 E 15th St Kansas City 3 Mo
Anti-Hydro Waterproofing Co 265 Badger Av Newark 8 N J
Barrett Div Allied Chemical & Dye Corp 40 Rector N Y 6 N Y p.351
Bird & Son Inc East Walpole Mass p.333, 356
Calbar Paint & Varnish Co 2612 N Martha St Philadelphia 25 Pa
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Ceresit Waterproofing Corp 512 S Canal St Chgo 7 Ill
Devoe & Raynolds Co Inc Dept A-5 787 First Av N Y 17 N Y p.207
Flinkote Co 30 Rockefeller Plaza NY 20 NY
Ford Roofing Products Co 111 W Washington Chgo 2 Ill
The Gibson-Homans Co 2366 Woodhill Rd Cleveland Ohio
Glidden Co Cleveland Ohio
Harrison Paint & Varnish Co 1329 Harrison Av S W Canton 1 Ohio
A C Horn Co 43-36 Tenth Long Island City N Y
Johns-Manville Corp PO Box 290 22 E 40th New York 16 NY p.280, 301, 347, 375
Lastik Products Co Inc Pittsburgh 22 Pa
Mar-Kay Mfg Co 2715 S Second St St Louis Mo
Minway Co Inc 11 W 42nd St New York 18 N Y
Mixtite Corp North Haven Conn
Pecora Paint Co American & Venango Philadelphia 40 Pa
Pittsburgh Plate Glass Co Pittsburgh 22 Pa p.209
Protective Papers Inc Union Ill p.354
The Ruberoid Co 500 Fifth Av N Y 18 N Y p.349
Steelcote Mfg Co 3418 Gratiot St Louis 3 Mo
United Gilsonite Laboratories Scranton 1 Pa
Vita-Var Corp 46 Albert St Newark 2 N J
W F Webster Cement Co 224 Thorndike St Cambridge 41 Mass

WATERPROOFING—integral

Adensite Co Inc 37-19 23rd St Long Island City N Y
American Fluresit Co Inc 635 Rockdale Av Cincinnati 29 Ohio
Anti Hydro Waterproofing Co 265 Badger Av Newark 8 N J
Ceresit Waterproofing Corp 512 S Canal St Chgo 7 Ill
Chicago Fire Brick Co 1461 N Elston Chgo 22 Ill
Dow Chemical Co Midland Mich
Evercrete Corp 424 W 42nd St NY NY
Forman Ford & Co 111 S 2nd St Minneapolis 1 Minn
Fort Pitt Chem Co 26th & Smallman St Pittsburgh 22 Pa
Harrop Chemical Co 135 Hoboken Av Jersey City 2 N J
A C Horn Co 43-36 Tenth Long Island City 1 N Y
Kay-Tite Co West Orange N J
Medusa Portland Cement Co 1046-1 Midland Bldg Cleveland 15 Ohio p.457
Ohio Hydrate & Supply Co Woodville O p.448
Pittsburgh Plate Glass Co Pittsburgh 22 Pa p.209
Ranetite Mfg Co 1917 S Broadway St. Louis Mo
Sealcon Prod Inc 927 Second Av S Minneapolis 2 Minn
L Sonneborn Sons Inc 88 Lexington Av NY 16 NY
N B Spurgeon Co 20 N Wacker Dr Chicago 6 Ill
Standard Dry Wall Products Inc PO Box X New Eagle Pa p.457
Steelcote Mfg Co 3418 Gratiot St Louis 3 Mo
The Sullivan Co P O Box 2606 Memphis 2 Tenn
Tamms Silica Co 228 N LaSalle Chgo 1 Ill p.449
Truscon Lab Inc Detroit Mich
Vita-Var Corp 46 Albert St Newark 2 N J
Weather Seal Co Cincinnati 2 Ohio

WATERPROOFING—liquid

Abesto Mfg Corp Dept D3 Michigan City Ind p.354
Adensite Co Inc 37-19 23rd St L I City N Y
American Fluresit Co Inc Cincinnati 29 O
Anti Hydro Waterproofing Co 265 Badger Av Newark 8 N J
Barrett Div Allied Chemical & Dye Corp 40 Rector N Y 6 N Y p.351
Breinig Bros Inc Hoboken N J
Calbar Paint & Varnish Co 2612 N Martha St Philadelphia 25 Pa
Ceraseal Chemical Corp 221 N LaSalle St Chicago 1 Ill
Ceresit Waterproofing Corp 512 S Canal Chgo 7 Ill
Cre-O-Tox Chem Co Memphis Tenn
Evercrete Corp 424 W 42nd St NY NY
Fort Pitt Chem Co 26th & Smallman Pittsburgh 19 Pa
Harrop Chemical Co 135 Hoboken Av Jersey City 2 N J
A C Horn Co 43-36 Tenth Long Island City N Y
Kay-Tite Co West Orange N J
Mar-Kay Mfg Co 2715 S Second St St Louis Mo
Mixtite Corp North Haven Conn
Peaslee-Gaulbert Paint & Varnish Co 223 N 15th St Louisville Ky
Pittsburgh Plate Glass Co Pittsburgh 22 Pa p.209
Protection Products Mfg Co Kalamazoo Mich p.64
Ranetite Mfg Co 1917 S. Broadway St Louis Mo
Robeson Preservo Co Port Huron Mich
Sealcon Products Inc Minneapolis 2 Minn
L Sonneborn Sons Inc 88 Lexington Av NY 16 NY
Standard Dry Wall Products Inc PO Box X New Eagle Pa p.457
The Sullivan Co P O Box 2606 Memphis 2 Tenn
Tamms Silica Co 228 N LaSalle Chgo 1 Ill p.449
Truscon Labs Detroit Mich
Vita-Var Corp 46 Albert St Newark 2 N J
Weather Seal Co Cincinnati 2 Ohio
Wesco Waterpaints Inc 2 Lexington East Boston 28 Mass
X-Pando Corp 43-15 36th Long Island City 1 N Y

WATERPROOFING—membrane

Barrett Div Allied Chemical & Dye Corp 40 Rector N Y 6 N Y p.351
Samuel Cabot Inc Rm 2349 Oliver Bldg Boston 9 Mass
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 Ohio p.336
Celadri Corp 652 Willis Av Williston Park N Y
A C Horn Co 43-36 Tenth Long Island City 1 N Y
Kay-Tite Co West Orange N J
Minwax Co Inc 11 W 42nd NY NY
Mixtite Corp North Haven Conn
Pittsburgh Plate Glass Co Pittsburgh 22 Pa p.209
Presstite Engineering 3900 Chouteau Av St Louis 10 Mo
Ranetite Mfg Co Inc St Louis Mo
Sealcon Products Inc Minneapolis 2 Minn
The Sisalkraft Co Dept AL 205 W Wacker Dr Chgo 6 Ill p.335
L Sonneborn Sons Co 88 Lexington Av NY NY
The Sullivan Co P O Box 2606 Memphis 2 Tenn
Vita-Var Corp 46 Albert St Newark 2 N J
Wasco Flashing Co Cambridge Mass

WATERPROOFING—metallic

Belmont Smelting & Refining Works Inc 330 Belmont Av Brooklyn 7 N Y
Ceresit Waterproofing Corp 512 S Canal Chgo 7 Ill
Fort Pitt Chemical Co 26th & Smallman St Pittsburgh 22 Pa
The Gibson-Homans Co 2366 Woodhill Rd Cleveland Ohio
A C Horn Co 43-42 Tenth Long Island City 1 NY
Mixtite Corp North Haven Conn
Ranetite Mfg Co Inc 1917 S Broadway St. Louis Mo
The Richkraft Co 228 N La Salle St Chicago 1 Ill p.341
Sealcon Prod Inc 927 Second Av S Minneapolis 2 Minn
Sisalkraft Co Dept AL 205 W Wacker Dr Chicago 6 Ill p.335
L Sonneborn Sons Inc 88 Lexington Av NY 16 NY
The Sullivan Co PO Box 2606 Memphis 2 Tenn
Tamms Silica Co 228 N LaSalle Chgo 1 Ill p.449
Truscon Labs Detroit Mich
Weather Seal Co Cincinnati 2 Ohio

WATERPROOFING—transparent

Adensite Co Inc 37-19 23rd St Long Island City N Y
American Fluresit Co Inc Cincinnati 29 Ohio
Anti-Hydro Waterproofing Co 265 Badger Av Newark 8 N J
Samuel Cabot Inc Rm 2349 Oliver Bldg Boston 9 Mass
Calbar Paint & Varnish Co 2612 N Martha St Philadelphia 25 Pa
Celadri Corp 652 Willis Ave Williston Park NY
Ceraseal Chemical Corp 221 N La Salle St Chicago 1 Ill
Ceresit Waterproofing Corp 512 S Canal Chgo 7 Ill
Continental Asbestos & Refining Corp 1 Madison Av New York 10 N Y
Evercrete Corp 424 W 42nd St NY NY
Fort Pitt Chem Co 26th & Smallman St Pittsburgh 22 Pa
The Gibson-Homans Co 2366 Woodhill Rd Cleveland Ohio
Glidden Co Cleveland Ohio
Harrop Chemical Co 135 Hoboken Av Jersey City 2 N J
Haynes Products Co 4007 Farnam St Omaha 3 Nebr
A C Horn Co 43-42 Tenth Long Island City 1 NY
Kay-Tite Co West Orange N J
Lumino Co 515 Madison Av NY 22 NY

Number after listing indicates page on which advertisement appears

Mar-Kay Mfg Co 2715 S Second St St Louis Mo
Minwax Co Inc 11 W 42nd NY NY
Mobile Paint Mfg Co Mobile 9 Ala
B F Nelson Mfg Co Minneapolis Minn
Pecora Paint Co Inc American & Venango Sts Philadelphia 40 Pa
Protection Products Mfg Co Kalamazoo 99 Mich p.64
Ranetite Mfg Co 1917 Broadway St Louis Mo
Sealcon Prod Inc 927 Second Av S Minneapolis 2 Minn
L Sonneborn Sons Inc 88 Lexington Av NY 16 NY
Standard Dry Wall Products Inc PO Box X New Eagle Pa p.457
The Sullivan Co P O Box 2606 Memphis 2 Tenn
Tamms Silica Co 228 N LaSalle Chgo 1 Ill p.449
Truscon Labs Detroit Mich
Vita-Var Corp 46 Albert St Newark 2 N J
Weather Seal Co Cincinnati 2 Ohio
X-Pando Corp 43-15 36th Long Island City 1 N Y

WATERPROOFING COMPOUNDS—basement, cistern

Abesto Mfg Corp Dept D3 Michigan City Ind p.354
Adensite Co Inc 37-19 23rd St Long Island City N Y
American Fluresit Co Cincinnati 29 O
Anti Hydro Waterproofing Co 265 Badger Av Newark 8 N J
Samuel Cabot Inc Rm 2349 Oliver Bldg Boston 9 Mass
Philip Carey Mfg Co Dept AL-4 Lockland Cincinnati 15 O p.336
Ceresit Waterproofing Corp 512 S Canal Chgo 7 Ill
Chicago Fire Brick Co 1461 N Elston Av Chgo 22 Ill
E D Coddington Mfg Co 5024 N 37th St Milwaukee 9 Wis
Continental Asbestos & Refining Corp 1 Madison Av New York 10 N Y
Devoe & Raynolds Co Inc Dept A-5 787 First Av New York 17 N Y p.207
Haynes Products Co 4007 Farnam St Omaha 3 Neb
A C Horn Co 43-42 Tenth Long Island City 1 N Y
Kay-Tite Co West Orange N J
Lumino Co Inc 515 Madison Av NY 22 NY
Mixtite Corp North Haven Conn
Penn Crete Products Co 20th & Lippincott Sts Philadelphia 32 Pa
Pittsburgh Plate Glass Co Pittsburgh 22 Pa p.209
Prima Products Inc 10 E 40th St New York 16 NY
Protection Products Mfg Co Kalamazoo 99 Mich p.64
Ranetite Mfg Co 1917 S Broadway St Louis Mo
Reilly Tar & Chemical Corp 1615 Merchants Bank Bldg Indianapolis 4 Ind
Republic Creosoting Co Merchants Bank Bldg Indianapolis 4 Ind
Smooth-on Mfg Co 568-574 Communipaw Av Jersey City 4 N J
Standard Dry Wall Products Inc PO Box X New Eagle Pa p.457
The Sullivan Co P O Box 2606 Memphis 2 Tenn
Tamms Silica Co 228 N LaSalle St Chicago 1 Ill p.449
Truscon Labs Detroit Mich
Vita-Var Corp 46 Albert St Newark 2 N J
Weather Seal Co Cincinnati 2 Ohio

WATER SYSTEMS

Aurora Pump Co 619 Loucks St Aurora Ill
Dayton Pump & Mfg Co 500 N Webster St Dayton 1 Ohio
Decatur Pump Co Decatur Ill
Delco Appliance Div General Motor Sales Corp Rochester N Y
The Deming Co Salem Ohio
Dempster Mill Mfg Co Beatrice Neb
Everite Pump & Mfg Co In 617-19 N Prince St Lancaster Pa
Fairbanks Morse & Co 600 S Michigan Av Chgo Ill
Flint & Walling Mfg Co Inc Kendallville Ind
Goulds Pumps Inc Seneca Falls N Y
The Heil Co 3000 W Montana St Milwaukee 1 Wis
Ingersoll-Rand Co 11 Broadway N Y 4 N Y
A Y McDonald Mfg Co Box 508 Dubuque Ia
F E Myers & Bro Co Ashland O
Pioneer Gen-E-Motor Corporation 5841 W Dickens Chgo 39 Ill
Pomona Pump Co Pomona Calif

WAX—floor

Acme White Lead & Color Wks 8250 St Aubin Av Detroit 11 Mich
Alabastine Paint Products Grand Rapids 9 Mich
American Floor Surfacing Machine Co 521 So St Clair St Toledo 3 Ohio p.314
Boston Varnish Co Boston 49 Mass p.213
Boyle-Midway Inc 257 Cornelison Av Jersey City 2 N J p.220
Breinig Bros Inc Hoboken N J
E L Bruce Co Memphis Tenn p.307
Chemical Supply Co 225 Plymouth Bldg Cleveland 15 Ohio
E I du Pont de Nemours & Co Inc Wilmington 98 Del
Farwell Ozmun Kirk & Co St Paul 1 Minn
Forman Ford & Co 111 S 2nd St Minneapolis 1 Minn
Franklin Research Co Philadelphia Pa
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland Ohio
R M Hollingshead Corp Camden N J
A C Horn Co 43-36 Tenth Long Island City 1 N Y
W W Lawrence & Co 1124 W Carson St Pittsburgh 19 Pa
Lowe Bros Co Dayton Ohio p.217
Minwax Co Inc 11 W 42nd NY NY
O-Cedar Corp 2246 W 49 Chgo Ill
Pratt & Lambert Inc 75 Tonawanda Buffalo 7 NY
Rogers Paint Products Inc Detroit 11 Mich
The Sargent-Gerke Co Indianapolis 6 Ind
Socony-Vacuum Oil Co inc 26 Broadway NY NY
L Sonneborn Sons Inc 88 Lexington Av NY 16 NY
L M Thornton Mfg Co 2825 E 18th St Kansas City Mo
Geo D Wetherill & Co 113 Arch St Philadelphia 6 Pa

WAX REMOVER—floor

Cellowax Co 2114 N Charles St Baltimore Md
Chemical Supply Co 225 Plymouth Bldg Cleveland 15 Ohio
E I du Pont de Nemours & Co Inc Wilmington 98 Del.
Gillespie Varnish Co Dey & Howell Sts Jersey City 6 N J
Glidden Co Cleveland 2 Ohio
Mobile Paint Mfg Co Mobile 9 Ala
Pratt & Lambert Inc 75 Tonawanda St Buffalo 7 N Y
James H Rhodes & Co 157 W Hubbard St Chicago 10 Ill
The Savogran Co 25 Huntington Av Boston 16 Mass
Schalk Chemical Co 351 E Second St Los Angeles 12 Cal
Tamms Silica Co 228 N LaSalle St Chgo 1 Ill p.449

WEATHERSTRIP

Accurate Metal Weatherstrip Co Inc 218 E 26th NY 10 NY
Allmetal Weatherstrip Co 229 W Ohio Chgo Ill
American Metal Weather Strip Co Grand Rapids Mich
Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Defiance Metal Weatherstrip Co Oak Harbor Ohio
W J Dennis & Co 4444 W Irving Park Chgo Ill p.142
Dorbin Metal Strip Mfg Co 2408 S Cicero Av Chicago 50 Ill
Dyke Bros Little Rock Ark p.192
The Handyman Co Minneapolis 3 Minn (French windows)
Lock Joint Window Co Oklahoma City Okla
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157, 262
Master Metal Strip Service Inc 1720 N Kilbourn Av Chgo Ill
Monarch Metal Weatherstrip Corp St Louis 14 Mo
Protex Weatherstrip Mfg Co 4500 S Western Chgo Ill
James H Rhodes & Co 157 W Hubbard St Chicago 10 Ill
Robbins Mfg Co Dept 122 1801 N Central Pk Av Chicago 47 Ill p.196
R O W Sales Co 218 E Harrison St Royal Oak Mich p.163
Samson Products Co 3219 Armitage Av Chicago 47 Ill
Security Sash & Screen Co 1757 Puritan Av Detroit 3 Mich p.190
Weatherproof Products Corp 329 Westport Rd Kansas City 2 Mo (metal) p.175
Window Devices Inc Des Moines 9 Ia
Zegers Inc 8088 South Chicago Av Chgo 17 Ill p.197

WEATHERSTRIP—door bottom

Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
W J Dennis & Co 4444 W Irving Park Chicago 39 Ill p.142
Dorbin Metal Strip Mfg Co 2408 S Cicero Av Chicago 50 Ill
The Handyman Co Minneapolis 3 Minn
Macklanburg-Duncan Co Oklahoma City 1 Okla p.157, 262
Master Metal Strip Service Inc 1720 N Kilbourn Av Chicago 39 Ill
Monarch Metal Weatherstrip Corp St Louis 14 Mo
Security Sash & Screen Co 1757 Puritan Av Detroit 3 Mich p.190
Window Devices Inc Des Moines 9 Ia
Zegers Inc 8088 South Chicago Av Chicago 17 Ill p.197

WEATHER VANES

Electra Protection Co Inc 11 N Pearl St Albany 7 N Y p.399
J W Fiske Iron Works 78 Park Place New York 7 N Y
Independent Protection Co Inc Goshen Ind (ornamental)

WEDGES—ax, hammer, logging

Michigan Wedge Co Sturgis Mich
Red Devil Tools Irvington 11 N J p.10
Western Foundry Co 2400 S W Water Av Portland 1 Ore

WHEELBARROWS

American Steel Scraper & Wheelbarrow Co Sidney Ohio
Chattanooga Wheelbarrow Co 1311 E Main St Chattanooga 2 Tenn
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105
Lansing Co Lansing Mich
Novo Engine Co Lansing 5 Mich (mechanized)
Seymour Mfg Co Inc Seymour Ind
Sterling Wheelbarrow Co Milwaukee Wis
Toledo Wheelbarrow Co Toledo Ohio
United States Steel Products Co U S Steel Corp Sub 30 Rockefeller Plaza N Y 20 N Y p.392
Western Wheel Barrow Mfg Co South Fort Smith Ark

WHEEL GUARDS

Adams Co Dubuque Ia
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
J W Fiske Iron Works 78 Park Place New York 7 N Y
Kentucky Metal Products Co Louisville 4 Ky
Majestic Co 103 Erie St Huntington Ind p.90
Wheeling Corrugating Co Wheeling W Va p.441

WINCHES—tractor & truck

American Hoist & Derrick Co 63 S Robert St Paul 1 Minn
Bridgeport Chain & Mfg Co Bridgeport 1 Conn
Four Wheel Drive Auto Co Clintonville Wis
Fruhauf Trailer Co Detroit 32 Mich
The Oliver Corp Industrial Div 19300 Euclid Av Cleveland 17 Ohio
David Round & Son Cleveland 5 Ohio
Shepard Niles Crane & Hoist Corp Montour Falls N Y
Silent Hoist & Crane Co 860 63rd Brooklyn 20 N Y p.482
Stimmel Winch Co 37-24 33rd St Long Island City 1 N Y
Gar Wood Industries Inc Wayne Div Wayne Mich

WINDMILLS

Baker Mfg Co Evansville Wis
Dempster Mill Mfg Co Beatrice Neb
Fairbanks Morse & Co 600 S Michigan Av Chgo Ill
Flint & Walling Mfg Co Inc Kendallville Ind
New England Tank & Tower Co Everett Mass
Stover Mfg & Engine Co Freeport Ill

WINDOW FRAMES—wood

Andersen Corp Bayport Minn p.150-151
American Sash & Door Co Kansas City 1 Mo
Biles-Coleman Lbr Co Inc Omak Wash p.194

Number after listing indicates page on which advertisement appears

Burke Millwork Co Inc 3201 Fremont Av Seattle 3 Wash
Carr Adams & Collier Co Dubuque Ia p.147
Cole Mfg Co P O Box 2657 Memphis 2 Tenn p.192
Curtis Cos Inc Clinton Ia
Farley & Loetscher Mfg Co Dubuque Ia
Gregg & Son Nashua N H p.158-159
Huttig Mfg Co Box AL Muscatine Iowa p.171
Huttig Sash & Door Co 1206 S Vandeventer Av St Louis 10 Mo
Ideal Co Box 889 Waco Tex
Keystone Frame & Mfg Co Spokane 3 Wash
Kinzua Pine Mills Co Kinzua Ore p.17
Long-Bell Lumber Co R A Long Bldg Kansas City 6 Mo & Longview Wash
Malta Mfg Co Malta Ohio p.153
Marquart Millwork Co Oshkosh Wis p.148
Millwork Distributors Co 2 N Kresson St Baltimore 24 Md p.188
Missoula White Pine Sash Co Missoula Mont
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
National Screen Co Inc Suffolk Va
National Screen Door Co Montgomery 3 Ala
Pacific Mutual Door Co Tacoma Wash
Roach & Musser Co Muscatine Ia p.191
Rock Island Sash & Door Wks Rock Island Ill
Segelke & Kohlhaus Co La Crosse Wis
Geo Silbernagel & Sons Co Wausau Wis
Frank C Snedaker & Co Inc Philadelphia 40 Pa
Spokane Pine Prod Co Spokane Wash
Western Pine Mfg Co Ltd Spokane 7 Wash p.197
Weyerhaeuser Sales Corp St Paul Minn p.62-63
White Pine Sash Co Spokane Wash

WINDOW GUARDS

Adams Co Dubuque Ia
Cincinnati Iron Fence Co Inc 2110 Florence Av Cincinnati 6 Ohio
Clay Equipment Corp Cedar Falls Iowa
Cyclone Fence Co Div American Steel & Wire U S Steel Corp Sub P O Box 260 Waukegan 1 Ill
Grand Rapids Wire Prod Co Grand Rapids Mich
Logan Co Inc Louisville 6 Ky
Mesker Bros Sales Div 4344 Geraldine St Louis 2 Mo p.172-173
Geo L Mesker Steel Corp Evansville 8 Ind
Natl Brass Co Grand Rapids Mich
Ney Mfg Co Canton O
F P Smith Wire & Iron Wks Inc 2346 N Clybourn Av Chgo 14 Ill
Southern Wire & Iron Wks 441 Memorial Dr S E Atlanta Ga
Standard Bronze Co Bayonne S N J p.255
Starline Inc Harvard Ill
Stewart Iron Wks Co Inc 1551 Stewart Block Cincinnati O
Sun Metal Products 221 N La Salle St Chgo Ill
Wheeling Corrugating Co Wheeling W Va p.441

WINDOWS—aluminum

A B C Steel Equipment Co Inc 205 E 22nd St NY 10 NY
Alcasco Products Inc 1144 9th St Muskegon Heights Mich p.192
Aluminum Window Corp Dept AL 801 Stewart Av Garden City N Y p.164-165
Aluminum Window Manufacturers Association Dept L 209 Cedar Av Takoma Pk Washington 12 D C p.154-155
William Bayley Co Springfield Ohio
Compo-Miracle Products Co Berkley Mich
Cupples Co 401 S 7th St St Louis 2 Mo p.256
Flour City Ornamental Iron Co Minneapolis Minn
Higgins Inc New Orleans La p.317
Michael Flynn Co 704 E Godfrey Av Philadelphia 24 Pa p.185-187
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105
Lundell Eckberg Mfg Co Inc Jamestown N Y
Pennsylvania Wire Glass Co Philadelphia 3 Pa
Premier Metal Products Corp Phoenix Ariz
Reynolds Metals Co Bldg Products Div 2002 S 9th St Louisville 1 Ky p.93
Sterling Windows Inc New Castle Ind
J S Thorn Co Philadelphia 32 Pa p.144-145
Valley Metal Products Co Plainwell Mich p.135
Ware Laboratories Inc 1827 Delaware Parkway Miami 35 Fla p.195

WINDOWS—awning

The Andal Mfg Co 122 Ash St Akron 8 Ohio
Gate City Sash & Door Co Dept L Fort Lauderdale Fla (wood) p.182-183
Super-Vent Co 905 W North Av Chicago 14 Ill p.196
Truscon Steel Co Youngstown 1 Ohio
Valley Metal Products Co Plainwell Mich p.135

WINDOWS—barn, steel, aluminum

The Adams Co Dubuque Iowa
Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Copco Steel & Engineering Co 14035 Grand River Av Detroit 27 Mich
Detroit Steel Products Co Dept AL-4-2269 E Grand Blvd Detroit 11 Mich p.176-177
Goodcraft Metal Products Co 2526 Fifth Av Detroit 1 Mich
James Mfg Co Fort Atkinson Wis
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105
Klauer Mfg Co Dubuque Iowa
Louden Machinery Co Fairfield Iowa
Steelcraft Mfg Co 9050 Blue Ash Rd Rossmoyne Ohio
Truscon Steel Co Youngstown 1 Ohio
Valley Metal Products Co Plainwell Mich p.135
Vento Steel Products Co Inc 249 Colorado Av Buffalo 15 N Y p.196

WINDOWS—combination

A W Barnhart Co Port Chester N Y
Carr Adams & Collier Co Dubuque Iowa p.147
Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Compo-Miracle Products Co Berkley Mich
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Gregg & Son 25 Crown St Nashua N H p.158-159
A D Hemphill Co 114 Franklin St Lake City Minn
Hope's Windows Inc Jamestown N Y
Huttig Mfg Co Box AL Muscatine Iowa p.171
Ingersoll Steel Div Borg Warner Corp 310 S Michigan Av Chgo 4 Ill
Kane Mfg Corp Kane Pa
Marquart Millwork Co Oshkosh Wis p.148
Morgan Company Oshkosh Wis
Robbins Mfg Co Dept 122 1801 N Central Park Av Chicago 47 Ill p.196
Phenix Mfg Co 4129 N Port Washington Rd Milwaukee 11 Wis p.411
Security Sash & Screen Co 1757 Puritan Av Detroit 3 Mich p.190
Seneca Lumber & Millwork Co Fostoria Ohio
Smalley Products Co Groton Conn
J S Thorn Co Philadelphia 32 Pa p.144-145
Truscon Steel Co Youngstown 1 Ohio
Wonder Window Co Fitchburg Mass (wood)

WINDOWS—double hung, steel

Adams & Westlake Co Elkhart Ind
S H Pomeroy Co Inc 25 Eastern Blvd NY NY
Potts-Farrington Co 1224 Cherry St Philadelphia 7 Pa
Soule Steel Co 1750 Army St San Francisco 24 Cal
J S Thorn Co Philadelphia 32 Pa p.144-145
Truscon Steel Co Youngstown 1 Ohio

WINDOWS—double hung, wood

American Sash & Door Co Kansas City 1 Mo
Andersen Corp Bayport Minn p.150-151
Anson & Gilkey Co Merrill Wis
Buffelen Lumber & Mfg Co Tacoma Wash
Carr Adams & Collier Co Dubuque Ia p.147
Chicago Fire Brick Co 1461 N Elston Chgo 22 Ill
Cole Mfg Co Memphis Tenn p.192
Curtis Companies Inc Clinton Ia
Dyke Bros Little Rock Ark p.192
Farley & Loetscher Mfg Co Dubuque Ia
Gregg & Son Nashua N H p.158-159
Hallack & Howard Lumber Co Denver 1 Colo
Huttig Mfg Co Box AL Muscatine Iowa p.171
Huttig Sash & Door Co 1206 S Vandeventer Av St Louis 10 Mo
Marquart Millwork Co Oshkosh Wis p.148
Millwork Distributors Inc 2 N Kresson St Baltimore 24 Md p.188
Missoula White Pine Sash Co Missoula Mont
Morgan Company Oshkosh Wis
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
N S W Co 2137 Gratiot Av Detroit 7 Mich
National Screen Door Co Montgomery 3 Ala
Northwest Door & Plywood Sales Tacoma 1 Wash
Pacific Mutual Door Co Tacoma Wash
Ponderosa Pine Woodwork 111 W Washington St Chicago 2 Ill
Pullum Window Corp 12950 Lyndon Av Detroit 27 Mich
J R Quigley Co Gloucester City N J
The Radford Co Oshkosh Wis
Roach & Musser Co Muscatine Ia p.191
Rock Island Sash & Door Wks Rock Island Ill
R O W Sales Co 218 East Harrison St Royal Oak Mich p.163
Segelke & Kohlhaus Co La Crosse Wis
Geo Silbernagel & Sons Co Wausau Wis
Geo J Silbernagel & S Michigan Av Chicago 3 Ill p.31
Frank C Snedaker & Co Inc Philadelphia 40 Pa
Western Pine Mfg Co Spokane Wash p.197
Weyerhaeuser Sales Co St Paul Minn p.62-63
White Pine Sash Co Spokane Wash

WINDOWS—pivoted & projected, steel, aluminum

The Adams Co Dubuque Iowa
Aluminum Window Manufacturers Association Dept L 209 Cedar Av Takoma Park Washington 12 D C p.154-155
A W Barnhart Co Port Chester N Y
William Bayley Co Springfield Ohio
Ceco Steel Products Corp 5601 W 26th St Chgo 50 Ill p.168-169
Copco Steel & Engineering Co Detroit 27 Mich
Crittall-Federal Inc Waukesha Wis
Decatur Iron & Steel Co Decatur Ala
Detroit Steel Products Co Dept AL-4 2269 E Grand Blvd Detroit 11 Mich p.176-177
Michael Flynn Mfg Co 704 E Godfrey Av Philadelphia 24 Pa p.185-187
Hope's Windows Inc Jamestown N Y
International Steel Co Evansville Ind
Marquart Millwork Co Oshkosh Wis p.148
Mesker Bros 4344 Geraldine St Louis 15 Mo p.172-173
Geo L Mesker Steel Corp Evansville 8 Ind
Michel & Pfeffer Iron Wks Inc 1415 Harrison San Fran 3 Cal
Republic Steel Corp Cleveland 1 Ohio
Soule Steel Co 1750 Army St San Francisco 24 Calif
J. S. Thorn Co Philadelphia 32 Pa p.144-145
Truscon Steel Co Youngstown 1 O

WINDOWS—pivoted & projected, wood

Cole Mfg Co Box 2657 Memphis 2 Tenn p.192
Copco Steel & Engineering Co 14035 Grand River Av Detroit 27 Mich
Goodcraft Metal Products 2526 Fifth Av Detroit 1 Mich
Hayman Window Co 4401 Race St Denver 16 Colo (removable)
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105

WINDOWS—steel basement

Adams Co Dubuque Ia
Allen Steel Products 12911 Hillview Detroit 27 Mich
A W Barnhart Co Port Chester N Y
Copco Steel & Engineering Co 14035 Grand River Av Detroit 27 Mich
Crittall Federal Inc Waukesha Wis
Detroit Steel Products Co Dept AL-4 2269 E Grand Blvd Detroit 11 Mich p.176-177
The Donley Bros Co 13928 Miles Av Cleveland 5 Ohio p.111-134
Michael Flynn Mfg Co 704 E Godfrey Av Philadelphia 24 Pa p.185-187
Fries & Son Covington Ky
Gabriel Steel Co Cat A-13700 Sherwood Detroit 12 Mich p.102-103
Goodcraft Metal Products Co 2526 Fifth Av Detroit 1 Mich
Hope's Windows Inc Jamestown N Y
Inland Steel Products Co (formerly Milcor Steel Co) 4027 W Burnham St Milwaukee 1 Wis p.446-447
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105

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Majestic Co 103 Erie St Huntington Ind p.90
New Monarch Machine & Stamping Co Des Moines Ia
Republic Steel Corp Cleveland 1 Ohio
Starline Inc Harvard Ill
Steelcraft Mfg Co 9050 Blue Ash Rd Rossmoyne Ohio
J S Thorn Co Philadelphia 32 Pa p.144-145
Truscon Steel Co Youngstown 1 O
Universal Fabricators 1801 Boone Av Bronx 60 N Y
Valley Metal Products Co Plainwell Mich p.135
Vento Steel Prod Co Inc 249 Colorado Ave Buffalo 15 N Y p.196

WINDOWS—steel casement

Allen Steel Products 12911 Hillview Detroit 27 Mich
A W Barnhart Co Port Chester N Y
Copco Steel & Engineering Co 14035 Grand River Av Detroit 27 Mich
Crittall-Federal Inc Waukesha Wis
Croft Steel Prod Inc 370 Lexington Av New York 17 NY
Decatur Iron & Steel Co Decatur Ala
Detroit Steel Products Co Dept AL-4 2269 E Grand Blvd Detroit 11 Mich p.176-177
Michael Flynn Mfg Co 704 E Godfrey Av Philadelphia 24 Pa p.185-187
Goodcraft Metal Products Co 2526 Fifth Av Detroit 1 Mich
Hope's Windows Inc Jamestown N Y
Mesker Bros Sales Div 4344 Geraldine St St Louis 2 Mo p.172-173
Geo L Mesker Steel Corp Evansville Ind
Michel & Pfeffer Iron Wks Inc San Francisco Cal
Potts-Farrington Co 1224 Cherry St Philadelphia 7 Pa (aluminum)
Republic Steel Corp Cleveland 1 Ohio
Soule Steel Co 1750 Army St San Francisco 24 Calif
Steelcraft Mfg Co 9050 Blue Ash Rd Rossmoyne Ohio
J S Thorn Co Philadelphia 32 Pa p.144-145
Truscon Steel Co Youngstown 1 O

WINDOWS—steel, storm

Adams Co Dubuque Ia
A W Barnhart Co Port Chester N Y
Detroit Steel Products Co Dept AL-4 2269 E Grand Blvd Detroit 11 Mich p.176-177
Hope's Windows Inc Jamestown N Y
Kewanee Mfg Co 449 Burlington St Kewanee Ill p.105
Mesker Bros Sales Div 4344 Geraldine St Louis 15 Mo p.172-173
Soule Steel Co 1750 Army St San Francisco 24 Calif
Steelcraft Mfg Co 9050 Blue Ash Rd Rossmoyne Ohio
Truscon Steel Co Youngstown 1 O

WINDOWS—barn, wood

Farley & Loetscher Mfg Co Dubuque Ia
Huttig Mfg Co Muscatine Ia p.171
Marquart Millwork Co Oshkosh Wis p.148
Morgan Co Oshkosh Wis
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
National Screen Door Co Montgomery 3 Ala
Northwest Door & Plywood Sales Tacoma 1 Wash
The Radford Co Oshkosh Wis
Rock Island Sash & Door Wks Rock Island Ill
Segelke & Kohlhaus Co La Crosse Wis
Geo Silbernagel & Sons Co Wausau Wis
George J. Silbernagel S S Michigan Av Chgo 3 Ill p.31
Western Pine Mfg Co Ltd Spokane 7 Wash p.197

WINDOWS—wood basement

Andersen Corp Bayport Minn p.150-151
Anson & Gilkey Co Merrill Wis
Cole Mfg Co P O Box 2657 Memphis 2 Tenn p.192
Curtis Companies Inc Clinton Ia
Farley & Loetscher Mfg Co Dubuque Ia
Gregg & Son Nashua N H p.158-159
Huttig Mfg Co Box AL Muscatine Ia p.171
Long Lake Lbr Co Spokane Wash
Marquart Millwork Co Oshkosh Wis p.148
Morgan Company Oshkosh Wis
Northwest Door & Plywood Sales Tacoma 1 Wash
Pacific Mutual Door Co Tacoma Wash
The Radford Co Oshkosh Wis
Roach & Musser Co Muscatine Ia p.191
Rock Island Sash & Door Works Rock Island Ill
Segelke & Kohlhaus Co La Crosse Wis
George J Silbernagel S S Michigan Av Chgo 3 Ill p.31
Western Pine Mfg Co Ltd Spokane 7 Wash p.197
Weyerhaeuser Sales Co St Paul Minn p.62-63

WINDOWS—wood casement

American Sash & Door Co Kansas City 1 Mo
Andersen Corp Bayport Minn p.150-151
Carr Adams & Collier Co Dubuque Ia p.147
Cole Mfg Co P O Box 2657 Memphis 2 Tenn p.192
Curtis Companies Inc Clinton Ia
Farley & Loetscher Mfg Co Dubuque Ia
Gregg & Son 25 Crown St Nashua N H p.158-159
Hoosier Sash & Door Co Anderson Ind p.194
Huttig Mfg Co Box AL Muscatine Ia p.171
Huttig Sash & Door Co 1206 S Vandeventer Av St Louis 10 Mo
Ideal Co Box 889 Waco Tex
The Long-Bell Lumber Co R A Long Bldg Kansas City 6 Mo & Longview Wash
Marquart Millwork Co Oshkosh Wis p.148
Millwork Distributors 2 N Kresson St Baltimore 24 Md p.188
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
Northwest Door & Plywood Sales Tacoma 1 Wash
Pacific Mutual Door Co Tacoma Wash
Pullum Window Corp 12950 Lyndon Av Detroit 27 Mich
J R Quigley Co Gloucester City N J
The Radford Co Oshkosh Wis
Rock Island Sash & Door Works Rock Island Ill
Roach & Musser Co Muscatine Ia p.191
Segelke & Kohlhaus Co La Crosse Wis
Geo Silbernagel & Sons Co Wausau Wis
George J Silbernagel S S Michigan Av Chgo 3 Ill p.31
Western Pine Mfg Co Ltd Spokane 7 Wash p.197
Weyerhaeuser Sales Co St Paul Minn p.62-63
White Pine Sash Co Spokane Wash

WINDOWS— wood, horizontal acting

Andersen Corp Bayport Minn p.150-151
Anson & Gilkey Co Merrill Wis
Gregg & Son 25 Crown St Nashua N H p.158-159
Northwest Door & Plywood Sales Tacoma 1 Wash
Geo Silbernagel & Sons Co Wausau Wis
The Long-Bell Lumber Co R A Long Bldg Kansas City 6 Mo
Western Pine Mfg Co Ltd Spokane 7 Wash p.197

WINDOWS—wood, storm

Carr Adams & Collier Co Dubuque Ia p.147
Cole Mfg Co Box 2657 Memphis 2 Tenn p.192
Curtis Companies Inc Clinton Ia
Farley & Loetscher Mfg Co Dubuque Ia
Fiddes-Moore & Co 205 W Wacker Dr Chgo Ill p.56
Gregg & Son Nashua N H p.158-159
Hallack & Howard Lumber Co Denver 1 Colo
A D Hemphill Co 114 Franklin St Lake City Minn
Huttig Mfg Co Box AL Muscatine Ia p.171
Huttig Sash & Door Co 1206 S Vandeventer Av St Louis 10 Mo
Marquart Millwork Co Oshkosh Wis p.148
Missoula White Pine Sash Co Missoula Mont
Morgan Co Oshkosh Wis
Morgan Sash & Door Co 2287 S Blue Island Av Chicago 8 Ill
Pacific Mutual Door Co Tacoma Wash
Phenix Mfg Co 4129 N Port Washington Rd Milwaukee 12 Wis p.411
F W Prentice & Co Adrian Mich
Roach & Musser Co Muscatine Ia p.191
Rock Island Sash & Door Works Rock Island Ill
F E Schumacher Co Hartville Ohio
Segelke & Kohlhaus Co La Crosse Wis
Geo Silbernagel & Sons Co Wausau Wis
George J. Silbernagel S S Michigan Av Chgo 3 Ill p.31
Western Pine Mfg Co Ltd Spokane 7 Wash p.197

WIRE—barbed

American Chain Link Fence Co Medford Mass
American Steel & Wire Co U S Steel Corp Sub Rockefeller Bldg Cleveland 13 O p.392
Bethlehem Steel Co Bethlehem Pa
Colorado Fuel & Iron Corp Denver 1 Colo
Columbia Steel Co Russ Bldg San Francisco 6 Cal p.392
Continental Steel Corp Kokomo Ind p.395
Copperweld Steel Co Glassport Pa
Jones & Laughlin Corp Pittsburgh Pa
Keystone Steel & Wire Co Peoria Ill p.397
Nichols Wire & Aluminum Co Davenport Iowa (steel & aluminum)
Northwestern Steel & Wire Co Sterling Ill
Pittsburgh Steel Co Pittsburgh 30 Pa
Republic Steel Corp Cleveland 1 Ohio
Sheffield Steel Corp Kansas City Mo
Tennessee Coal Iron & R R Co U S Steel Corp Sub Birmingham 2 Ala p.392

WIRE—galvanized steel

Ace Window Screen Co of America 1634 S Pulaski Rd Chgo 23 Ill
American Chain Link Fence Co Medford Mass
American Steel & Wire Co U S Steel Corp Sub Rockefeller Bldg Cleveland 13 O p.392
Bethlehem Steel Co Bethlehem Pa
Century Fence Co Waukesha Wis
Colorado Fuel & Iron Corp Denver 1 Colo
Columbia Steel Co Russ Bldg San Francisco 6 Cal p.392
Continental Steel Corp Kokomo Ind p.395
Johnson Steel & Wire Co Inc Worcester Mass
Jones & Laughlin Steel Corp Pittsburgh Pa
Keystone Steel & Wire Co Peoria Ill p.397
Walter S Kraus Co 43—10 48th Av Woodside N Y
Laclede Steel Co St Louis 1 Mo
Nichols Wire & Aluminum Co Davenport Iowa (also aluminum)
Northwestern Steel & Wire Co Sterling Ill
Pittsburgh Steel Co Pittsburgh Pa
Republic Steel Corp Cleveland 1 Ohio
John A. Roebling's Sons Co Trenton N J
Seneca Wire & Mfg Co Fostoria O
Sheffield Steel Corp Kansas City Mo
Tennessee Coal Iron & R R Co U S Steel Corp Sub Birmingham 2 Ala p.392
Wickwire Bros Inc Cortland N Y p.254
Wickwire Spencer Steel A Div of The Colorado Fuel & Iron Corp 500 Fifth Av New York 18 NY
Youngstown Sheet & Tube Co Youngstown 1 Ohio

WIRE PULLERS & STRETCHERS

Bethlehem Steel Co Bethlehem Pa
Century Fence Co Waukesha Wis
Continental Steel Corp Kokomo Ind p.395
Crescent Tool Co Jamestown N Y
Franklin Equipment Co Monticello Ia
Keystone Steel & Wire Co Peoria Ill p.397
Mason Fence Co Leesburg Ohio
Ney Mfg Co Canton Ohio
Starline Inc Harvard Ill

WOOD—balsa

Balsa Ecuador Lbr Corp 500 5th Av NY NY
J-W Plywood Co 9 S Clinton Chgo Ill
F C Luthi & Co Balter Bldg New Orleans 12 La

WOOD—compregnated

Farley & Loetscher Mfg Co Dubuque Iowa
Formica Insulation Co 4501 Spring Grove Av Cincinnati 32 Ohio
Parkwood Corp Wakefield Mass

Number after listing indicates page on which advertisement appears

Northeastern Lumber, Specialties and Other Items

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	W—North. White Pine N—Norway Pine	Eastern Hemlock	Eastern Spruce	Ash	Basswood	Beech	Birch	Cherry	Maple	Oak	Y—Yard & Shed Stock S—Softwood Flooring	D—Dimension T—Softwood Timbers	S—Bevel Siding H—Hardwood Flooring	A—Air Dried Rgh. Dimension K—K.D. Rgh. Dimension	F—Finished Dimension S—Semi-Finished Dimension	H—Hardwood Timbers V—Vehicle & Wagon Stock	B—Box Shook C—Crating	Other
MAINE																				
Augusta Lbr. Co., Augusta	MW		W	X	X														B	P
J. G. Deering & Son, Biddeford	M		W	X	X							X								P
M. S. Hancock, Inc., Casco	M		WN	X								X								
Timberlands Inc., Dixfield	M		WN																	
MASSACHUSETTS																				
Atlantic Lbr. Co., Boston	MW	50				X	X	X	X	X	X	X						HV	C	O
Chaffee Bros. Co., Oxford	M		WN	X		X	X	X	X		X	X							BC	
Fessenden Companies, Inc., Townsend	M		W									X								
H. A. Stiles Co., Boston 14	M																			S
NEW HAMPSHIRE																				
Johnson Lbr. Co., Inc., Manchester	MW	15	W	X					X		X	X								
The Kennett Co., Conway	M		WN	X					X			X				A				P
Langdell Lbr. Co., Milford	M		W	X																
John R. Mathes & Sons, Inc., Dover	M		WN	X										DT					BC	
NEW YORK																				
Adirondack Core & Plug Co., Carthage	W		W	X	X	X	X	X	X	X	X	X		T						
The Blount Lbr. Co., Lacona	M					X		X	X	X	X				H					
H. M. Booher, Nedrow	MW			X	X	X	X	X	X	X	X	X	Y			AK		H		P
Cotton & Hanlon, Odessa	MW	30	W	X	X	X	X	X	X	X	X	X	Y	D	H	AK	F	HV	C	Δ
Geo. E. Cressy & Sons, Utica, N. Y.	MW		WN	X										DT	H	AK	F		BC	P
Cross, Austin & Ireland Lbr. Co., Brooklyn 6	W		WN										YS	DT	SH					O
Elliott Hardwood Co., Potsdam	M	5						X	X	X	X									
Emporium Forestry Co., Conifer	M		W	X	X		X	X	X	X	X		YS	T	H	AK	S	H		
Farrell Lbr. Co., Poland	M			X	X	X	X	X	X	X	X									
Fordom Forest Prods. Corp., New York 17																				MF
Greene Lbr. Co., Greene	M		W	X		X	X	X			X	X				A				P
R. T. Jones Lbr. Co., N. Tonawanda	MW	35	WN	X	X								YS	DT	S	A			BC	O
A. Mason & Sons, Inc., Peru	M		WN		X				X	X	X	X	YS	DT		AK	F		B	
J. H. Monteath Co., New York 51	MW			X		X	X	X	X	X	X	X	YS			AK				O3
Oval Wood Dish Corp., Tupper Lake	M	25	W	X	X	X	X	X	X	X	X				H					
Plunkett-Webster Lbr. Co. Inc., New Rochelle	MW	15	W	X	X	X	X	X	X	X	X	X	Y	DT	SH	AK	FS	HV	BC	O
Warren Ross Lbr. Co., Falconer, N. Y.	W	5				X	X	X	X	X	X	X					FS	HV		2
Treat-Nantke Co. Inc., No. Tonawanda	M*	10	W		X								Y		S					Δ
Ernst Seidelmann, Woolworth Bldg., N. Y. 7	W																			
PENNSYLVANIA																				
Babcock Lbr. Co., Pittsburgh 19	MW	40	W	X			X	X	X		X	X	YS	DT	SH			H	BC	
Cooper-Smith Lbr. Co., Wilkes-Barre	MW	5		X		X	X	X	X	X	X	X		T		A				
Everett Hardwood Lbr. Co., Everett	MW	30	W	X	X	X	X	X	X	X	X	X	Y	DT	SH	AK		H	C	O
Gray Chemical Co., Roulette	M							X	X	X	X									
Fisher & Young, Titusville	MW	5	W	X		X	X	X			X	X	X	Y			A	F	H		P
Endeavor Lbr. Co., Endeavor	MW	5	W	X		X	X	X	X	X	X	X	Y	DT			A	F	H	C	*

*Custom Mfrs.
O—Other Woods

P—Poles and Piling
Δ—Mahogany

S—Wood Plugs, Bollers, Turnings, Knobs, Dowels, Dowel Pins

1—Importers of Foreign Woods
2—Also Poplar and Elm

3—Plywood and Veneer
MF—Mahogany, Foreign Woods

Northeastern Lumber, Specialties and Other Items

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	W—North. White Pine N—Norway Pine	Eastern Hemlock	Eastern Spruce	Ash	Basswood	Beech	Birch	Cherry	Maple	Oak	Y—Yard & Shed Stock S—Softwood Flooring	D—Dimension T—Softwood Timbers	S—Bevel Siding H—Hardwood Flooring	A—Air Dried Rgh. Dimension K—K.D. Rgh. Dimension	F—Finished Dimension S—Semi-Finished Dimension	H—Hardwood Timbers V—Vehicle & Wagon Stock	B—Box Shook C—Crating	Other
PENNSYLVANIA—Continued																				
Wm. Schuette Co., Pittsburgh	W		W		X								YS	DT	SH				BC	O
Wistar, Underhill & Co., Philadelphia	W		W	X	X	X	X	X	X		X	X	YS	DT	SH					O
VERMONT																				
C. E. & F. O. Burt Co., Stowe	M		W	X	X				X		X									
Holden & Martin Lbr. Co., Brattleboro	M		W	X	X							X								
Parker & Stearns, Johnson	M			X	X		X	X	X		X				H					
Plant & Griffith Lbr. Co., Jonesville	MW		W	X	X		X	X	X		X	X				A				
Ward Lbr. Co., Moretown	M		W	X	X			X	X		X			D	S					

O—Other Woods

Appalachian Hardwood Lumber, Specialties and Other Items

	H—Manufacturer W—Wholesaler	Annual Capacity Million Feet	A—Ash B—Basswood	X—Beech B—Birch	C—Cherry Y—Chestnut	Z—Hickory H—Hard Maple	S—Soft Maple O—Red & White Oak	P—Poplar S—Sycamore	W—Walnut	A—A.D. Rough Dimension K—K.D. Rough Dimension	F—Finished Dimension S—Semi-Finished Dimension	G—Glued Up Dimension I—Interior Trim & Moulding	T—Thresholds, Treads, Risers W—Wall Paneling	C—Construction Boards T—Timbers	Vehicle & Wagon Stock	C—Crating Stock B—Bending Stock	Appalachian White Pine	S—Appalachian Spruce H—Appalachian Hemlock	P—Southern Pine H—Hardwood Flooring	Other
Atlanta Oak Fig. Co., Atlanta 1, Ga.	MW		AB	XB	CY	ZH	SO	PS	W	AK	FS	GI	TW	CT	X	C	X	H	H	O
Atlantic Lbr. Co., 88 Broad St., Boston	MW	50	AB	XB	CY	ZH	SO	PS	W					T	X	B			P	
Babcock Lbr. Co., Pittsburgh 19	MW	40		XB	Y	H	O	PS		A	FS		T	CT		C	X	SH	PH	
L. N. Bagnal, P. O. Box 2896, Winston-Salem, N. C.	W		AB	XB	Y	ZH	SO	PS	W	AK	FS	GI				C			P	O
J. B. Belcher, Box 8, Bluefield, W. Va.	MW	15	AB	XB	CY	ZH	SO	P	W					T		B				
Bemis Hardwood Lbr. Co., Robbinsville, N. C.	M	10	AB	XB	CY	ZH	SO	P		AK								H		1Z
Bristol Door & Lbr. Co., Bristol, Va.	M	6	AB	X	Y	H	SO	P				GI	T							
D. D. Brown, Elkins, W. Va.—See adv. p. 67	MW		AB	XB	CY	ZH	SO	P	W	AK				CT	X	C	X	H	H	
Carr Lbr. Co., Pisgah Forest, N. C.	M	8			Y		SO	P				I					X		H	1
Cherry River Boom & Lbr. Co., Richwood, W. Va.—See p. 67	MW	25	AB	XB	CY	H	SO	P		AK	FS	GI	TW	CT						
Christian Lbr. Co., Monticello, Ky.—See adv. p. 67	MW																			
Conasauga River Lbr. Co., Conasauga, Tenn.	M	16	AB	XB			SO	P		A	F			CT	X	C	X	H	P	
F. C. Cook & Co., Baltimore 2, Md.	MW		AB	X	Y	H	SO	P						T					H	
M. E. Crisp Lbr. Co., Welch, W. Va.—See adv. p. 67	M		AB	XB	CY	ZH	SO	P	W	A				CT						3
Elk River Coal & Lbr. Co., Swandale, W. Va.	M	7	AB	X		ZH	SO	P	W	A	S			T	X			H		3
Ely-Thomas Lbr. Co., Camden-on-Gauley, W. Va.	M	12																		
English Lumber Co., Asheville, N. C.	MW										S	GI	TW				X			
M. B. Farrin Lbr. Co., Cincinnati, O.—See adv. p. 67	MW		AB	XB	Y	ZH	O	P			FS	GI	TW						H	
Gennett Lbr. Co., Asheville, N. C.	M	18	AB	XB	CY	H	SO	P	W						X		X	H	H	
Georgia-Pacific Plywood & Lbr. Co., Augusta—See adv. pp. 40-41	MW	250	AB	XB	CY	ZH	SO	PS	W	AK			W	CT	X	C		H	PH	

1—Black Gum and Buckeye
2—Plastering Lath
3—Black Gum
Z—Butternut
O—Red & Sap Gum, Mahogany and Softwoods

Appalachian Hardwood Lumber, Specialties and Other Items

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	A—Ash B—Basswood	X—Beech B—Birch	C—Cherry Y—Chestnut	Z—Hickory H—Hard Maple	S—Soft Maple O—Red & White Oak	P—Poplar S—Sycamore	W—Walnut	A—A.D. Rough Dimension K—K.D. Rough Dimension	F—Finished Dimension S—Semi-Finished Dimension	G—Glued Up Dimension I—Interior Trim & Moulding	T—Thresholds, Treads, Risers W—Wall Paneling	C—Construction Boards T—Timbers	Vehicle & Wagon Stock	C—Crating Stock B—Bending Stock	Appalachian White Pine	S—Appalachian Spruce H—Appalachian Hemlock	P—Southern Pine H—Hardwood Flooring	Other
Griffith Lbr. Co., Huntington, W. Va.	MW	7	AB	XB	C	ZH	SO	P	W					T		B				
Grissom-Rakestraw Lbr. Co., Burnside, Ky.	MW																			
J. P. Hamer Lbr. Co., Kenova, W. Va.—See adv. p. 67	MW	5	AB			H	O	P						T		B				
Hardwood Corp. of America, Asheville, N. C.	MW	25	AB	XB	CY	ZH	SO	P	W	AK	FS	GI	TW	CT	X	CB	X	H	PH	67
Hart-Thompson Lbr. Co., Barbourville, Ky.	M	2	AB	X	Y	ZH	SO	PS	W	A					X	CB				8Z
Huntington Hardwood Co., Huntington, W. Va.—See adv. p. 67	M	5	B		C	H	O	P	W											
Hutton & Bourbonnais Co., Hickory, N. C.—See adv. p. 67	M	15			Y		O	P								C	X			
Inter-Mountain Coal & Lbr. Co., Elkins, W. Va.	M	5	AB	XB	C	ZH	SO	P	W											
Kitchen Lbr. Co., Ashland, Ky.	M		AB	X		ZH	S	P	W											3
Marshall Lbr. Co., Marion, N. C.	MW	15	AB	XB	CY	H	SO	P	W			G	T		X		X	H	H	8Z
McCracken & McCall Inc., Lexington 9, Ky.—See adv. p. 67	MW	5	AB	X		ZH	SO	P	W					CT	X	C		H		4
McCulloch Lbr. Co., Atlanta, Ga.—See adv. p. 88	W		B	XB		H	SO	P	W					C	X				H	O
Meadow River Lbr. Co., Rainelle, W. Va.—See adv. pp. 67, 89	M	25	AB	XB	CY	ZH	SO	P		AK	FS	GI	T	T		B			H	5
Miller Bros. Co., Johnson City, Tenn.	M	25		XB		H	O				FS	GI	T						H	6
T. W. Minton & Co., Barbourville, Ky.	MW	5	AB	X		ZH	SO	P	W	AK	S	I		T	X	B			H	7
Morrison, Gross & Co., Erwin, W. Va.—See adv. p. 67	M	5	AB	XB	C	H	SO	P	W					T						
Mountain Fork Lbr. Co., Bluefield, W. Va.	M																			
Mowbray & Robinson Lbr. Co., Cincinnati, O.—See adv. p. 67	M		AB	XB	CY	ZH	SO	P	W	A				T	X	CB				
The Mower Lbr. Co., Charleston 28, W. Va.—See adv. pp. 67, 74	MW	40	AB	XB	C	ZH	SO	P	W					T	X	C		SH	H	
Oakboro Lbr. Co., Lenoir, N. C.	M	10			Y		O	P									X	H	P	
P. W. Plumly Lbr. Corp., Winchester, Va.—See adv. p. 67	M		AB	XB	C	Z	SO	P		AK		I	TW	T		B	X		PH	
Poinsett Lbr. & Mfg. Co., Pickens, S. C.	MW	12	AB	XB	CY	Z	SO	PS	W	AK	FS	GI	TW	T	X	CB	X	H	P	8
W. M. Ritter Lbr. Co., Columbus, O.	M	50	AB	XB	CY	ZH	SO	P	W	AK			T	T	X	CB	X	H	P	9
D. M. Rose & Co., Knoxville 4, Tenn.	M	5	AB	X	CY	ZH	SO	P	W	AK	S	GI	T	T	X				H	
Schilling Lbr. Co., Parkersburg, W. Va.	MW		B	X	C	ZH	SO	PS	W	A				T	X	B				
Wm. C. Schreiber Lbr. Co., Chicago 16, Ill.	W		AB	XB	CY	ZH	SO	P	W	AK					X				PH	
Stearns Coal & Lbr. Co., Stearns, Ky.—See adv. p. 67	M	15	AB	XB	Y	H	SO	P		A							X	H	P	
Stimson Lbr. Co., Owensboro, Ky.	M	12	AB	X		ZH	SO	PS	W					T				H		
Stuart Lbr. Corp., Stuart 10, Va.	M	10	A	XB	C		SO	PS	W			I	TW						PH	6
Thompson Mahogany Co, Philadelphia 36, Pa.	M						O	P	W											TM
Vestal Lbr. & Mfg. Co., Knoxville, Tenn.—See adv. p. 84	M	40	AB	XB	CY	ZH	SO	PS	W	AK				T		CB	X	H	P	
Viall Lbr. Co., Barbourville, Ky.	M																			
Joe Virgeson Lbr. Co., Inc., Columbia, S. C. See p. 74	W		AB	XB		ZH	SO	P	W	AK	FS	GI							PH	O
Warner Lbr. Co., Asheville, N. C.	M		AB	XB	CY	H	SO	P	W								X	H		
Webster Hardwood Lbr. Co., Dixie, W. Va.	M																			
West Virginia Lbr. Co., Elkin, W. Va.	MW	6	AB	XB	CY	ZH	SO	P		A				T		C		SH	H	
Williams-Brownell Planing Mill Co., Asheville, N. C.	MW	10	AB	XB	CY	ZH	SO	P	W	AK	FS	GI	TW	CT			X	H	H	67
Wood-Mosaic Co., Inc., Louisville 9, Ky.—See adv. p. 67	MW	20	AB	XB	C	ZH	SO	PS	W	A			W	T	X	CB			H	10
Wright-Bachman Lbr. Co., Forest City, N. C.	MW																			
J. Walter Wright Lbr. Co., Bristol, Tenn.	MW	15	AB	XB		ZH	SO	PS	W	A		G				C				
Zickgraf Hardwood Co., Franklin, N. C.	M	7					O				FS	I	W				X		PH	

3—Black Gum
4—Black Gum, Buckeye, Poplar Bevel Siding
5—Poplar Bevel Siding
6—Aromatic Red Cedar
7—Poplar Bevel Siding 1828, Factory Lumber, Furniture Squares, Broom Handles, Ladder Rungs, Wood Turnings
8—Hardwood Factory Lumber, Furniture Squares
9—Poplar Bevel Siding, Furniture Squares, Black Gum, Buckeye
10—Black Gum, Butternut, Aromatic Red Cedar, Veneers of Practically all species
Z—Butternut
TM—Furnish Veneers of practically all Species—Main Lumber Product Mahogany
O—Other Woods

Northern Hardwood, White Pine, Hemlock and Spruce Lumber and Specialties

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	W—Northern White Pine N—Norway Pine	H—Northern Hemlock S—Northern Spruce	A—Ash B—Basswood	B—Birch. X—Beech	X—Chestnut. C—Cherry	S—Soft Elm. R—Rock Elm	H—Hard Maple S—Soft Maple	Y—Yard & Shed Stock L—Lath	D—Dimension T—Timbers	S—Bevel Siding H—Hardwood Flooring	W—White Cedar Shingles L—Log Cabin Siding	F—Factory Lumber I—Industrial Cut Stock	A—Air Dried Rgh. Dimension K—K.D. Rgh. Dimension	F—Finished Dimension S—Semi-Fin. Dimension	G—Glued-up Dimension B—Bending Stock	H—Hardwood Timbers V—Veneer. P—Plywood	B—Construction Boards S—Box Shook. C—Crating	Other
Ahonen Lbr. Co., Ironwood, Mich.	M		W	HS	AB	XB		RS	HS	Y	D	H			AK					
Chas. H. Barnaby, Greencastle, Ind.	M	5			AB	X	C	S	HS						A		B			0
Bay De Noquet Co., Chicago 4, Ill.	M	22	W	HS		XB			HS	YL	D			FI	AK	FS	G	HV		
Paul B. Berry, Grand Rapids 6, Mich.	W				AB	XB	XC	RS	HS						A		G	H	B	0
Boehm-Madisen Lbr. Co., Milwaukee 3, Wis.	M	20	W		AB	B		RS	HS			H		FI	AK					
Wm. Bonifas Lbr. Co., Neenah, Wis.	M	20	W	HS	AB	B		S	HS			S	L	FI	AK	S				0
Bowler Lbr. Co., Bowler, Wis.	MW	3	W	H	AB	XB	C	RS	HS	Y										3
Cadillac-Soo Lbr. Co., Sault Ste. Marie, Mich.	M	15	W	HS	AB	XB		S	HS	YL	T			F				H		
C. M. Christiansen Co., Phelps, Wis.	M	15	WN	HS	AB	B		S	HS	Y	D	S	L	FI	A	S	B	H	BS	0
Clark Dickerson Lbr. Co., Reed City, Mich.	MW		W	H	AB	XB		RS	HS											
Cleveland Cliffs Iron Co., Negaunee, Mich.																				WP
Connor Lbr. & Land Co., Marshfield, Wis.—See adv. p. 302	M	50	W	HS	AB	B		RS	HS	YL	D	SH	WL	F	AK	FS	G			★6
Copeland Lbr. Co., Chicago, Ill.	MW	42	W	H	AB	XB	C	S	HS	Y				F					C	△5
John E. Fink Lbr. Co., Cable, Wis.	M		WN	H	AB	B		S	H	Y	DT	S		FI	A	F			BC	
Abbott Fox Lbr. Co., Iron Mountain, Mich.	M	16	W	H	AB	B		RS	HS	Y			L	F						
Fry-Fulton Lbr. Co., St. Louis 4, Mo.—See adv. p. 78	W		W		B	B			HS						AK			VP		0
Gillies Bros., Braeside, Ont., Canada	M	30	W							Y	D			F						
Goodman Lbr. Co., Goodman, Wis.	MW	18	W	HS	AB	XB		RS	HS	YL	D	S	L	FI	AK	FS	B	HV	SC	
Hawley Lumber Co., Ontonagon, Mich.	MW		W	H	AB	B		S	HS	Y			L		A				B	E
Holt Hardwood Co., Oconto, Wis.—See adv. p. 322	W				B	XB		S	HS	Y		H								*0
Jauquet Lbr. Co., Newald, Wis.	M	4	W	H	AB	B		RS	HS					F	A				BC	
Knoke Lbr. Co., Appleton, Wis.	MW	4	W	H	AB	XB	C	RS	HS	Y	T			F					BC	4★
Knudson & Mercer Lbr. Co., Chicago 4—See adv. p. 78	W		W	H						Y	DT									0
Menominee Indian Mills, Neopit, Wis.—See adv. p. 80	M	22	W	H	AB	XB		RS	HS											0
Menzner Lbr. & Supply Co., Marathon, Wis.	MW	2	W	H	AB	B		RS	HS	Y										
Michigan Dimension Co., Manistique, Mich.	M											H			K	FS	G			
Michigan Pole & Tie Co., Newberry, Mich.	M	10	WN	HS		XB			HS		T	SH		F				H	BC	★
Michigan Maple Block Co., Petoskey, Mich.	MW	8	WN	HS	AB	XB		S	HS			S	WL	FI	AK	S			C	
Frank Paxton Lbr. Co., Kansas City 3, Kas.	W				AB	XB	XC	S	HS			H		F						0
Rainy Lake Lbr. Co., Ltd., Chicago 2, Ill.—See adv p. 82	MW		WN	S						YL	D	S	L	F						
Robbins Flooring Co., Reed City, Mich.—See adv. p. 319	M											H								
Roddis Plywood Corp., Marshfield, Wis.—See adv. p. 68	MW	40	W	HS	AB	B		RS	HS	YL	T	SH	WL	F				P	C	†
Schneider Bros. Lbr. Co., Marquette, Mich.	M			H	AB	XB		RS	HS	Y	D				AK					
Trout Creek Lbr. Co., Trout Creek, Mich.	M		WN							Y				F	AK					
Underwood Veneer Co., Bessemer, Mich.	M		W		AB	B		S	H	Y								VP		
M. J. Wallrich Land & Lbr. Co., Shawano, Wis.	MW	5	WN	HS	AB	XB	X	RS	HS	YL	DT	S	L	F					C	5
White River Timber Co., Bergland, Mich.	M		W	HS	AB	B		S	HS		DT								B	
Yawkey-Bissell Corp., White Lake, Wis.	M	10				B		RS	HS			H								

*—Graded Hardwood Sawdust
★—Cedar Poles, Ties, Posts
□ Hardwood Squares

†—Hdwd. Ven'nd Doors
△—Vehicle & Wagon Stock
E—Ties and Logs and Graded Hardwood Sawdust

0—Other Woods TL—Ties and Logs
3—Red Oak
WP—Wood Products to Customers' Pattern

4—Cottonwood, Hickory, Butternut
5—Red & White Oak, Yellow Poplar
6—Graded Hardwood Sawdust, Hardwood Squares

Southern Hardwood Lumber, Specialties and Other Items

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	A—Ash B—Basswood	X—Beech. C—Cherry	Y—Cottonwood. E—Elm	G—Red & Sap Gum B—Black Gum	T—Tupelo H—Hickory	M—Magnolia S—Soft Maple	O—Red & White Oak P—Pecan	X—Poplar S—Sycamore	W—Walnut L—Willow	A—A.D. Rough Dimension K—K.D. Rough Dimension	F—Finished Dimension S—Semi-Finished Dimension	G—Glued-up Dimension I—Interior Trim & Mouldings	T—Thresholds, Treads, Risers W—Wall Paneling	C—Construction Boards T—Timbers	V—Vehicle & Wagon Stock C—Crating	P—Southern Pine C—Cypress *	R—Red Cedar W—White Cedar	Other
ALABAMA																				
S. B. Adams Lbr. Co., Inc., Box 345, Mobile	M	12	AB	X	YE	GB	TH	MS	O	XS	W					CT	VC	C		#
Cathey Lumber Co., Montgomery	M	18	AB	X	YE	GB	TH	MS	OP	XS						CT		PS		#
Clarke County Lbr. Mills, Thomasville	W		AB	X	YE	GB	T	MS	OP	XS		AK	S	GI	T	CT	C	P		
Fisher Bros. Lbr. Co., Tuscaloosa	M	9		X	E	GB	TH	S	OP							CT		PC		△
Hallett Mfg. Co., Inc., Mobile 2	M	8	A	X	YE	GB	TH	MS	OP	XS	L	AK	F	G	T	CT	V	PC		#
Kentwood Lumber Corp., Birmingham	W					GB			O	X				GI	TW	CT	C	P		•
Miller & Co., Inc., Selma—See adv. p. 305	M	50	AB	X	YE	GB	TH	MS	O	XS	W	A				T	VC	PC		#2
Mobile River Sawmill Co., Mt. Vernon	M	20	A		Y	GB	T	M	O	P						CT	C	C		△#
Parnell Lbr. Co., Pine Hill	MW		AB	X	YE	GB	T	MS	O	X		AK						PC		
Pine Plume Lbr. Co., Montgomery 1—See adv. p. 89	MW	40	A	X	YE	GB	TH	MS	O	XS						C	C	P		
Scotch Lbr. Co., Fulton—See adv. p. 77	M	25	A	X	YE	G	TH	M	O	XS		AK	F			T	C	PC		
Sears Lbr. Co., Mobile	M		A	X	YE	GB	T	M	O	X						T				
Smith Lbr. Co., Red Bay	M	25	A	X	E	GB	TH	S	O	XS		A	F			CT	C	PC	R	•●
W. C. Smith Lbr. Co., Montgomery 3	W		B		YE	GB	TH	MS	O	XS	L	A				CT		P		
W. T. Smith Lbr. Co., Chapman—See adv. p. 320	M	60	AB	XC	YE	GB	TH	MS	OP	XS	L		S			T	C	PC		★
Stutts Lbr. Co., Inc., Thomasville—See adv. p. 86	M	22	AB	XC	YE	GB	TH	MS	OP	XS	WL	AK	FS			T	C	PC		
Stutts Sawmill Co., Inc., Thomasville—See adv. p. 86	M	18	AB	XC	YE	GB	TH	MS	OP	XS	WL	AK	FS			T	C	PC		
Vredenburg Saw Mill Co., Vredenburg	M	15	A		Y	GB	T	M	O	XS						T		PC		
J. W. Wells Lbr. Co., Montgomery 1—See adv. p. 88	M	100	AB	X	YE	GB	TH	MS	OP	XS						CT		PC		†
Williams & Voris Saw Mill Co., Birmingham	M	6	AB	X	E	GB	T	S	O	XS						CT	VC	P		•△
Youngerman-Reynolds Lbr. Co., Montgomery	MW	40	A	X	YE	GB	T	MS	O	X		A	FS			CT	C	PC		
ARKANSAS																				
Arkansas Lbr. Co., Little Rock—See adv. p. 87	W		AB	X	YE	GB			O											
J. W. Black Lbr. Co., Corning	M	5	A		YE	GB	TH	S	O							CT	V			•#
Bradley Lbr. Co., of Ark., Warren—See adv. p. 48	M	50	A	X	E	GB	H		OP	S			S	GI	TW	T	C	PC		
Breece-White Mfg. Co., Eudora	M	8	A		YE	G		S	OP	S	L					T		C		
Crossett Lbr. Co., Crossett	M	48	A	X	E	GB			OP	S		AK		I	TW	CT	VC	PC		#
Dacus Lbr. Co., West Memphis	M	8	A		YE	GB	TH	S	OP	S	L					T		C		
Fordyce Lbr. Co., Fordyce—See adv. p. 313	M	24	AB	XC	E	GB	H		O	S		AK	FS	I	TW	CT	VC	PC		#
Gurdon Lbr. Co., Gurdon—See adv. p. 321	M	25	A		YE	GB	H		P	S						C	C	PC		
Industrial Lbr. Co., Little Rock—See adv. p. 320	M	30				GB	T		OP			AK	FS	GI	TW					
Keystone Lbr. Co., Camden	M	14				GB			O							T		P		
McLean-Arkansas Lbr. Co., Little Rock	M	8	A		YE	GB	TH	S	OP	S	L	K				T		C		
Northern Ohio Co., Parkin	M	6	A		YE	GB	T	S	OP	S						T		C		
Ozan Lbr. Co., Prescott—See adv. p. 65	M	25	A		E	GB	TH		OP	S	L	K				CT		C		
Reynolds-Gammill Lbr. Co., El Dorado	M	30	A	X	E	GB	T		O							CT	C	PC		•
Carlton Smith Industries, Inc., Bearden	M												S	G						
Southern Lbr. Co., Warren	M	20		X		G	H		O			K	F	I	TW	CT	C	PC		
Sparkman Hardwood Lbr. Co., Sparkman	M	8	AB	X	E	GB			O	S						CT	C	C		RT
Townsend Bros., Stuttgart	M	14			YE	G			OP	S	L					T				
Wheeler Lbr. Co., Pine Bluff	M	7	A	X	YE	GB	T	S	O	S						T		C		
J. L. Williams & Sons, Sheridan	M	12				GB	TH		O							CT	V	P		●
Williams Mfg. Co., Sheridan	MW	25				GB	T		O	S			S			T	V	P		1
DISTRICT OF COLUMBIA																				
Paul B. Kern Lbr. Co., Washington	W		AB	X		GB	T	S	O	X			F	I	TW			PC		

2—Bending Stock
△—Poplar Aircraft Stock

★—Birch
•—Car Material
†—Veneer

RT—R.R. Ties, Mine Ties
●—2x4 & Wdr. R/L Gr. Dimension, Car Material, and Ties

1—4/4 K. D. Gum S2S
2—R. R. Ties, Mine Ties

Southern Hardwood Lumber, Specialties and Other Items

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	A—Ash B—Basswood	X—Beech. C—Cherry	Y—Cottonwood. E—Elm	G—Red & Sap Gum B—Black Gum	T—Tupelo H—Hickory	M—Magnolia S—Soft Maple	O—Red & White Oak P—Pecan	X—Poplar S—Sycamore	W—Walnut L—Willow	A—A.D. Rough Dimension K—K.D. Rough Dimension	F—Finished Dimension S—Semi-Finished Dimension	G—Glued-up Dimension I—Interior Trim & Mouldings	T—Thresholds, Treads, Risers W—Wall Paneling	C—Construction Boards T—Timbers	V—Vehicle & Wagon Stock C—Crating	P—Southern Pine C—Cypress	R—Red Cedar W—White Cedar	Other
FLORIDA																					
Foley Lbr. Industries, Jacksonville 1	MW	30	A			GB	T	MS	O	X		AK	FS			T	C	PC	RW	
Paterson-McInnis Lbr. Co., Gulf Hammock	M	25	AB	C	E	GB	T	MS	OP							T		PC	R	
St. Joe Lbr. & Export Co., Port St. Joe	M	24	A			GB	T	M		X						CT	C	PC	W	•
Thomas Lbr. & Mfg. Co., Quincy	M	8			E	G	T	M		X						T		P		
GEORGIA																					
Augusta Hardwood Co., Augusta	M	12	A		YE	GB	TH	MS	O	XS		AK						PC		
Chatsworth Lbr. Co., Chatsworth	M	9							O	X						T	C	P		
Chattahoochee Valley Lbr. Co., La Grange	M	12	A			G			O	X			F			C	C	P		
Cleveland-Oconee Lbr. Co., Toomsboro	MW	6	A		YE	GB	TH	MS	O	XS						CT	C	PC		
Georgia-Pacific Plywood & Lbr. Co., Augusta—See adv. pp. 40-41	MW	250	AB	XC	YE	GB	TH	MS	OP	XS	WL	AK			W	CT	VC	PC	RW	Z
Jeffreys-McElrath Mfg. Co., Macon	M	45	A		Y	GB		S	O	XS								P		1
McCann Lbr. Co., Doctortown	M	12	A		E	G	T	MS	O	X		K				CT		PC		
McCulloch Lbr. Co., P. O. Box 771, Atlanta—See adv. p. 88	W		AB	X	YE	GB	TH	MS	OP	XS	WL	AK			W	CT	VC	PC	R	M
Northcutt Lbr. Sales Corp., Sandersville	W		A	X	YE	GB	TH	MS	O	XS		AK				C	C	PC		
Pratt Lbr. Co., Covington	M					GB	T	S	O	X						C		P		
Reynolds Bros. Lbr. Co., Albany	M	12	A	X	YE	G	TH	MS	O	XS		AK	S	I	T	CT	VC	PC		Δ1
Reynolds & Manley Lbr. Co., Savannah—See adv. p. 20	MW	30	A		E	GB	T	MS	O	X						T	C	PC		
Rush Lbr. Co., Hawkinsville	M	8	A		YE	GB	TH	MS	O	XS						C		PC		
J. W. Starr & Sons Lbr. Co., Atlanta	M	25				GB			O	X		A	F			T	VC	P		
Sullivan Lbr. Co., Preston	M	15	A	X	YE	GB	TH	MS	O											
Swainsboro Lbr. Co., Swainsboro	MW	12	A		YE	GB	HT	MS	O	XS	•							PC		
ILLINOIS																					
Graham Lbr. Co., Chicago 4	MW		B	XC	YE	GB	T	S	O	XS	W	AK	F			T	C	PC	R	12
Geo. J. Silbernagel, Chicago 3—See adv. p. 31	W					GB	T		O									PC		
KANSAS																					
Frank Paxton Lbr. Co., Kansas City 3	W		AB	XC	YE	GB	H	MS	OP	XS	WL				W		V	PC	R	2
KENTUCKY																					
Brown Lbr. Co., Louisville 8	W	24				GB	T	MS	O	X						CT	C	PC		
Gamble Bros. Inc., Louisville	M											K	FS	G		T				
The Mengel Co., Louisville 1—See adv. pp. 13, 161	M	20	AB	X	YE	GB	TH	MS	OP	XS	L	AK	FS	G	W			C		12
R. C. Owen Co., Hopkinsville	M	12	A	XC	YE	GB	H	S	O	XS	W	AK	FS	I	TW	T	V		R	
Stimson Lbr. Co., Owensboro	M	8	AB	X	E	G	H	S	O	XS						T				
LOUISIANA																					
Davis Bros. Lbr. Co., Ltd., Ansley—See adv. p. 68	M	9	A	X	E	GB	H		O											
Dixie Lbr. Co., New Orleans	W																			M
Frost Lbr. Industries, Shreveport	M	125	AB	X	YE	GB	TH	MS	OP	XS		K	S	I	TW	CT	VC	PC		6
Higgins, Inc., New Orleans—See adv. p. 317																				45
Hillyer Deutsch Edwards Inc., Oakdale	M	50	A	XC	YE	GB	TH	M	OP	S	L	AK	S	I		T	VC	PC		
J. W. Jeffries Lbr. Co., Shreveport	M	8	AB	X	YE	GB	TH	MS	OP	S						CT		PC		•
Kellogg Lbr. Co., Monroe	M	9	AB	X	YE	GB	TH	MS	OP	XS	L					CT		C		•
King Lumber Industries, Inc., St. Francisville	M	24	AB	XC	YE	GB	TH	MS	OP	XS	WL					CT	VC	PC		•
Louisiana Central Lbr. Co., Clarks	M	20	A	X	E	GB		M	OP	XS							V	PC		
F. C. Luthi & Co., New Orleans 12	W																			I
Mansfield Hardwood Lbr. Co., Shreveport	M	40	A	XC	E	GB	TH	M	OP	S		AK	S	GI	TW	CT	VC	PC		*3

Δ—Poplar Aircraft Stock
*—Car Material
12—Boxes, Box Shook, Plywood & Veneer
1—Boxes, Box Shook
2—Plywood & Veneer
3—Box Shook
I—Importers of Balsa and Other Tropical Woods
6—Car Material, Bending Stock, Treated Lumber
M—Mahogany Lumber & Logs & Birch Plywood
4—Mahogany and Spanish Cedar Lumber and Veneers
5—Gum, Oak, Mahogany and Cypress Plywood
Z—Buckeye, Butternut, Hackberry, Mahogany, Teak

Southern Hardwood Lumber, Specialties and Other Items

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	A—Ash B—Basswood	X—Beech. C—Cherry	E—Elm. Y—Cottonwood	G—Red & Sap Gum B—Black Gum	T—Tupelo H—Hickory	M—Magnolia S—Soft Maple	O—Red and White Oak P—Pecan	X—Poplar S—Sycamore	W—Walnut L—Willow	A—A.D. Rough Dimension K—K.D. Rough Dimension	F—Finished Dimension S—Semi-Finished Dimension	G—Glued-up Dimension I—Interior Trim & Mouldings	T—Thresholds, Treads, Risers W—Wall Paneling	C—Construction Boards T—Timbers	V—Vehicle & Wagon Stock C—Crating	P—Southern Pine C—Cypress	R—Red Cedar W—White Cedar	Other
LOUISIANA—Continued																				
Roy O. Martin Lbr. Co., Alexandria	M	10	A	X	E	GB	TH	MS	OP	S	L				W	CT	C	PC		
May Bros., Garden City	M	30	AB	XC	YE	GB	TH	MS	OP	XS	L					T	VC	PC		
McCarroll Lbr. Co., Denham Springs	M	8		X		GB	TH	M	OP	XS						T		PC		4
Newellton Hardwood Co., Newellton	M	9	A		YE	G		S	OP	S	L					T		C		
W. A. Ransom Lbr. Co., Harahan	M	12	AB	XC	YE	GB	TH	MS	OP	XS	L					CT	V	C		•△
Schwing Lbr. & Shingle Co., Plaquemine	M	15			YE	G	T	S	OP	S	L			I		CT		C		EC
E. Sondheimer Co., Sondheimer	M	10	A		YE	G	TH	S	OP	S	L					T		C		
Thistlethwaite Lbr. Co., Opelousas	M	8	AB	X	YE	GB	TH	M	OP	S	L							C		
Turner Lbr. Co., Le Moyen	M	11	AB		YE	GB	T	S	OP	S	L					T		C		
Urania Lbr. Co., Urania—See adv. p. 72	M	18	A	X	E	GB	TH	M	OP	XS		A	S			CT	VC	PC		
Weaver Bros. Lbr. Co., Shreveport	M	12	AB	XC	YE	GB	TH	MS	OP	S						T		PC		
Woodward-Walker-Bowen, Inc., Shreveport 94—See adv. p. 84	W			X		GB			O								C	PC		
MARYLAND																				
Arthur V. Charshee & Son, Baltimore 18—See adv. p. 88	W		A		Y	GB			O	X		AK								
Taylor & Newcomb, Inc., Catonsville-Baltimore 28	W		A	X	YE	GB	T	S	O	X		AK						P		
MASSACHUSETTS																				
Atlantic Lbr. Co., Boston	M	50	AB	XC	YE	GB	TH	MS	OP	XS	WL					T	V	PC	R	#
MISSISSIPPI																				
Bailey Lbr. Co., Laurel	M	12	AB	X	YE	GB	TH	MS	O	XS		AK	S			CT	VC	PC		•#
Burdette Lbr. Co., Meridian	MW	25				5	5		O	X						T		P		
Corinth Planing Mill Co., Corinth—See adv. p. 80	MW	5				G			O	X		A						P		9
A. De Weese Lbr. Co., Philadelphia	M	20				GB	T		O	X		AK	FS			C		P		#6
D. L. Fair Lbr. Co., Louisville—See adv. p. 310	M	30	B			G	H		OP	X		AK	FS	GI	T	CT	C	P		
Gooch Bros. Lbr. Co., Yazoo City	M	7	AB	X	YE	GB	H	S	O	XS						T		C		
D. H. Hall Lbr. Co., Columbus	M	7	A	X	YE	GB	T	S	OP	XS						T		C		•
Hall-Inzer Lbr. Co., Amory	M	5	A	X	YE	GB	T	S	OP	XS	WL					T		PC		•
Hall & Neely, New Albany	M	5	A	X	YE	GB	TH	S	O	XS	W					T		C		
Henderson-Molpus Co., Philadelphia	M	12		X		GB	T		O	X		AK	F	I	T	T	C	P		
Houston Bros., Vicksburg	M	10	AB	XC	YE	GB	TH	MS	OP	XS	WL	A	S			T	VC	PC		
J. M. Jones Lbr. Co., Natchez	MW	30	AB	XC	YE	GB	TH	MS	OP	XS	WL	AK	FS			CT	VC	PC		#
King Lumber Industries, Canton	M	18	A	X	E	GB	TH	MS	O	XS		AK	F	G		T	C	PC		
R. S. Learned & Son, Natchez	M	9	AB	X	YE	G		S	OP	XS	L					T				
Link-Newcomb Mill & Lbr. Co., Tchula	M	12	AB	X	YE	GB	TH	S	OP	XS	L					CT	C	C		
McGraw-Curran Lbr. Co., Yazoo City	M	9	B	XC	YE	GB	TH	MS	OP	XS	L					T		C		
Phillips-Rhyne Lbr. Co., Inc., Brookhaven	MW		AB	X	YE	GB	TH	MS	OP	XS	L	AK	FS	GI	TW	CT	VC	PC		15
Stewart-Farris & Myers Lbr. Co., Morton	M	15	A	X	E	GB	T	M		XS		AK	FS	I		C	C	P		
R. A. Vinton Lbr. Co., Greenwood	M	11	A	X	YE	GB	TH	S	OP	XS	L					T		C		
Wax Lbr. Co., Woodville	M	18	AB	XC	YE	GB	TH	MS	OP	XS	WL	A	F			CT	C	PC		
Williams & Voris Hardwood Co., Jackson	M	5	AB	XC	YE	GB	TH	MS	OP	XS						T		C		
W. W. Woody Lbr. Co., Keirn	M	5	A	X	YE	GB	TH	S	OP	XS	L					T		C		
MISSOURI																				
Canthook Lbr. Co., St. Louis 1	MW				YE	G		S	O	XS						CT		PC		
Dierks Lbr. & Coal Co., Kansas City 6—See adv. p. 322	M	100				GB			O			AK		GI	T	C	C	P		
Exchange Sawmills Sales Co., Kansas City 6	W		A	X		GB	T	M	OP	XS						C	C	PC		
W. T. Ferguson Lbr. Co., St. Louis 1—See adv. p. 87	MW	75	A	X	YE	GB	T	MS	O	XS	L	AK	S			CT	VC	PC		8
Fry-Fulton Lbr. Co., St. Louis 4—See adv. p. 78	W		AB	XC	YE	GB	TH	MS	OP	XS	WL	AK					VC	C		70

2—Bending Stock
•—Car Material
EC—Egg Case Ends & Centers
6—Rgh. Bds., Finished Bds., Box Shook, Grain Doors
△—Poplar Aircraft Stock
O—Other Woods
4—Box Shook and Grain Doors
15—Stacking Sticks
8—Grain Doors
9—Crating Stock
7—Mahogany

Southern Hardwood Lumber, Specialties and Other Items

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	A—Ash B—Basswood	X—Beech, C—Cherry	E—Elm, Y—Cottonwood	G—Red & Sap Gum B—Black Gum	T—Tupelo H—Hickory	M—Magnolia S—Soft Maple	O—Red and Dhite Oak P—Pecan	X—Poplar S—Sycamore	W—Walnut L—Willow	A—A.D. Rough Dimension K—K.D. Rough Dimension	F—Finished Dimension S—Semi-Finished Dimension	G—Glued-up Dimension I—Interior Trim & Mouldings	T—Threshold, Treads, Risers W—Wall Paneling	C—Construction Boards T—Timbers	V—Vehicle & Wagon Stock C—Crating	P—Southern Pine C—Cypress	R—Red Cedar W—White Cedar	Other
MISSOURI—Continued																				
Gaines Hardwood Lbr. Co., St. Louis	MW		AB	XC	YE	GB	TH	MS	OP	XS	WL					T	V	C	R	*#
Gideon-Anderson Lbr. Co., Gideon	W	6		X	YE	GB	T	S		S							C	C		1
Hobae Veneer & Lbr. Co., Caruthersville	M	7	A		YE	G		S	OP	S						T		C		
M. E. Leming Lbr. Co., Cape Girardeau	M	4		X	YE	G	H	S	OP	XS	L					CT	C	C		4
Long-Bell Lbr. Co., Kansas City 6	MW		AB	X	E	GB	TH	S	O	XS			S	GI		CT	VC	PC		*
Midland Valley Lbr. Co., St. Louis 3	MW	12	AB	XC	YE	GB	TH	MS	OP	XS	WL					CT	VC	PC	R	
Sabine Lbr. Co., St. Louis	M	75	AB	X	YE	GB	H	M	OP	S		A				T		P		
Thomas & Proetz Lbr. Co., St. Louis	MW		A	XC	YE	GB	T	MS	OP	XS	WL			I		T	C	PC		
H. E. Webster Lbr. Co., Kansas City 6.	W		AB	X	YE	G	TH	MS	OP	XS	WL							PC	R	
NORTH CAROLINA																				
L. N. Bagnal, P. O. Box 2896, Winston-Salem	W		AB	X	YE	GB	TH	MS	O	XS	L	AK	FS	G	W		C	PC		N
P. M. Barger Lbr. Co., Statesville	W		AB	XC	YE	GB	TH	MS	OP	XS	L						C	PC	R	
E. N. Beard Lbr. Co., Greensboro	W		AB	X	YE	GB	TH	MS	OP	XS	L		S			T	C	PC		#
C. K. Callaham & Sons Lbr. Co., Charlotte			A	X	YE	GB	TH	MS	O	XS	L					CT	VC	P		
J. E. Elrod Lbr. Co., Charlotte—See adv. p. 72	MW				Y	GB		S	OP	X		AK	FS			CT	C	PC		
Gennett Lbr. Co., Asheville																				
Greene Bros. Lbr. Co., Elizabethtown	M	15				G	T	S	O	X		K		G				PC		
Saunders & Cox, Williamston	M	7	A		Y	GB	T	S	O	S						CT		PC		
So. Atlantic Lbr. Co., Greensboro	MW						T		O	X						C	C	PC		
W. M. Storey Lbr. Co., Southern Pines	MW					GB	T		O	X		AK	F			CT	C	P		1
Triplett Lbr. Co., Lenoir	W	4	AB	X	YE	GB	TH	S	OP	XS	L	AK	F		T	CT	VC	PC		
SOUTH CAROLINA																				
Argent Lbr. Co., Hardeeville	M	18	A			GB	T	S		X			S	I	W	C		PC		4
Brooklyn Cooperage Co., Sumter	M	30	A		Y	G	T					AK						C		
Coastal Lbr. Co., Lake City	M	7	A		YE	GB	T	S	O	XS						CT		PC		10
Conway Lbr. Co., Conway	M	12				GB	T	S		X						T		PC		10
Dixie Lbr. Co., Conway	W		A		Y	GB	T	MS	O	X								C		
Hoffman Lbr. Co., Columbia	M	12	A		YE	GB	T	S	O	XS						CT		C		10
Holly Hill Lbr. Co., Holly Hill	M	17	A		YE	GB	T	S	O	XS		AK	FS	GI	TW	CT	C	PC		11
Holly Hill Cypress Co., Holly Hill	M	19	A		E	GB	T	S	O	X		AK	FS	GI	TW	CT	C	PC		10
Korn Industries, Inc., Sumter	M	15	A		YE	GB	TH	S	OP	XS		AK	FS	GI	TW	CT	C	PC		14
G. F. League Lbr. Co., Greenville	W		AB	X	Y	GB	T		O	XS		AK				C	C	P		
Lexington Lbr. Co., Columbia	M	15	A		Y	GB	T	S	O	XS						CT	C	PC		
Lightsey Bros., Miley—See adv. p. 66	M	18	A		E	G	T	S	O	X						T		PC		
Santee River Hardwood Co., St. Stephen	M	12	A		YE	GB	TH	S	OP	XS								PC		10
Joe Virgeson Lbr. Co., Inc., Columbia—See adv. p. 74	W		AB	XC	YE	GB	TH	MS	OP	XS	W	AK	FS	GI						
TENNESSEE																				
Anderson-Tully Co., Memphis 10	M	75	AB	XC	YE	GB	TH	MS	OP	XS	WL	AK	FS	G	T		VC	PC		12
C. P. Bodine Lbr. Co., Memphis	MW	7			YE	GB	T	S	OP	S						T		C		
A. M. Bowen Lbr. Co., Dyersburg	M	7	AB	X	YE	GB	H	S	OP	XS	W	A				CT	C	C		11
E. L. Bruce Co., Memphis 1—See adv. p. 277	M	100	AB	XC	YE	GB	TH	MS	OP	XS	WL	AK	FS	GI	T	T	VC	PC	R	#4
Farris Hardwood Lbr. Co., Nashville																				
Chapman & Dewey Lbr. Co., Memphis	M	18	A	X	YE	GB	TH	S	OP	XS	L			I	TW	CT	C	C		10
Frank A. Conkling Co., Memphis 3	MW	15	AB	X	YE	GB	TH	MS	OP	XS	L	AK	S	G		T	VC	C		12

*—Car Material
1—Boxes, Box Shook
N—Plywood, Veneer and All Hardwood Items for Furniture Trade
10—Cypress Siding
11—Poplar & Cypress Siding
12—Plywood & Veneer
#—Bending Stock
14—Gum Veneer, Flitches & Logs
4—All Items Hardwood Lumber for Furniture Trade

Southern Hardwood Lumber, Specialties and Other Items

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	A—Ash B—Basswood	X—Beech. C—Cherry	Y—Cottonwood. E—Elm	G—Red & Sap Gum B—Black Gum	T—Tupelo H—Hickory	M—Magnolia S—Soft Maple	O—Red & White Oak P—Pecan	X—Poplar S—Sycamore	W—Walnut L—Willow	A—A.D. Rough Dimension K—K.D. Rough Dimension	F—Finished Dimension S—Semi-Finished Dimension	G—Glued-up Dimension I—Interior Trim & Mouldings	T—Thresholds, Treads, Risers W—Wall Paneling	C—Construction Boards T—Timbers	V—Vehicle & Wagon Stock C—Crating	P—Southern Pine C—Cypress	R—Red Cedar W—White Cedar	Other
TENNESSEE—Continued																				
Fulton Band Mill, Memphis	M	7		X	YE	GB	T		O	XS						T		C		
C. M. Gooch Lbr. Co., Memphis	M	32	AB	XC	YE	GB	TH	MS	OP	XS	WL					T		C		
Jackson Sawmill Co., Jackson	M	9	A	X	YE	GB	TH	S	O	XS	WL					T	VC	C		#
Miller & Co., Jackson—See adv. p. 305	M	4	A	XC	YE	GB	TH	S	O	XS	W					T	V	C	R	#
Miss.-Valley Hardwood Co., Memphis	M	26	A	X	YE	GB	TH	MS	OP	XS	WL							C		14
Nickey Bros., Inc., Memphis 12	MW	20	AB	XC	YE	GB	TH	MS	OP	XS	WL	AK	FS	GI	TW	CT	V	C	R	HV
E. W. Pratt, Memphis	W		AB	X	YE	GB	T	MS	O	X		AK		I			V			#
Schaefer Lbr. Co., Inc., Jackson	MW			X		G			O	S										
Shannon Bros. Lbr. Co., Memphis	M	14	A	X	YE	G	T	S	OP	S	L					T		C		
The Southern Star Lbr. Co., McKenzie	M	5	A	XC	E	GB	TH	S	O	XS	W									
James E. Stark Co., Memphis 10	M	12	AB	XC	YE	GB	TH	S	OP	XS	WL	K	FS	G		T	V	C		16
Thompson-Kats Lbr. Co., Memphis	W		A																	17
United Timber & Lbr. Co., Memphis	M	11	AB	XC	YE	GB	TH	MS	OP	XS	WL	A	S	I		CT	C	PC		18
Vestal Lbr. & Mfg. Co., Knoxville—See adv. p. 84	M	40	AB	XC	YE	GB	TH	S	OP	XS	WL	AK				T	C	PC	R	#
Walker & Smith Lbr. Co., McMinnville	MW	5	AB	XC	E	B	H		O	X	W					T	V		R	#
Welsh Lbr. Co., Memphis	M	11	A	X	YE	GB	TH	S	OP	XS	L					T		C		
Williams & Voris Lbr. Co., Chattanooga	M	8	AB	XC	YE	GB	TH	MS	O	XS	W						V		R	
Woods Lbr. Co., Inc., Memphis	MW	20	A	X	YE	GB	TH	MS	OP	XS	L					T		C		
TEXAS																				
Angelina Hardwood Sales Co., Lufkin—See adv. p. 83	M	24	A		E	GB	TH	M	OP	S		AK	FS	GI	TW	CT	VC	C		RT
W. T. Carter & Bro., Houston	M	8	AB	X	E	GB	H	M	O	S						CT	V	PC		•
Edens-Birch Lbr. Co., Corrigan	M	25	A	X	YE	GB		M	OP	S		AK	F		T	C	VC	PC		
Lacy H. Hunt Lbr. Co., Nacogdoches	MW	18				GB	T		O			AK	F					P		
J. S. Hunt Lbr. Co., Nacogdoches	M	12				GB						K	F			T		P		
Kirby Lbr. Corp., Houston 1—See adv. p. 78	MW	20	A	X	E	GB	H	M	OP	S						T		PC		
Sabine Lbr. Co., Houston	M	15	AB	X	YE	GB	H	MS	OP	S	WL	A				T	C	PC		
Southern Pine Lbr. Co., Texarkana	M	20	AB	XC	YE	GB	TH	M	OP	S	W	K	FS	GI	T	T		PC		
E. A. Stewart Lbr. Co., Texarkana	M	37	A		YE	GB	TH		OP		WL	AK	FS	I	T	CT	V	C		•#
J. E. Stone Lbr. Co., Nacogdoches	M	12	A	X	E	GB	H	M	O	S	W			I	W	CT	VC	P		•
Temple Lbr. Co., Pineland	M	9	AB	X	E	GB	TH	MS	OP	S		AK	FS	G	T	CT		PC		•
Texas Hardwood Mfg. Co., Dallas	MW											K	FS	G						
VIRGINIA																				
Camp Mfg. Co., Franklin	M	10	A	X	E	GB	T	S	O	XS				I			C	PC		10
Richmond Cedar Works, Norfolk	M	33	A		E	GB	T	S	O	X				I	W	CT	C	PC	W	19
Williams & McKeithan Lbr. Co., Lynchburg	MW	40	A	X		GB	TH	S	O	XS		A	F			CT	C			

2—Bending Stock
HV—Hardwood Plywood and Veneers
15—Stacking Sticks RT—R. R. Ties, Mine Ties
16—K.D. Casket Shells, Completed Furniture & Parts, Show Cases
17—Ash Specialists
18—Hickory Dimension, Ski Billets
•—Car Material
Stacking Sticks
14—Gum Veneer Flitches & Logs
19—Cypress Siding—Also

Southern Pine, Cypress, Hardwoods, Specialties

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	Shortleaf Yellow Pine	Longleaf Yellow Pine	Cypress	Southern Hardwoods	Yard & Shed Stock	D—Dimension T—Timbers	L—Lath C—Cedar Closet Lining	Interior Trim & Mouldings	X—Pine Bev. Sd. D—Drop Sd. C—Cyp. Sd. P.—Poplar Sd.	Flooring X—Pine, C—Cypress	H—Hardwood Flooring C—Hardwood Constr. Boards	F—Factory Lumber I—Industrial Cut Stock	X—Box Shook & Crating C—Crating Only	K. D. Window & Door Frames	L—Log Cabin Siding K—Knotty Paneling	R—Roofers, B—Boards	C—Car Material T—Treated Stock	Other
ALABAMA																				
Allison Lbr. Co., Bellamy	M	16	X			X	X	DT		X		X	H		X					
Beatrice Lbr. Co., Beatrice	M	12	X			X	X	DT												
W. A. Belcher Lbr. Co., Birmingham	MW	15	X	X		X	X	DT	L	X	X	X	H		C					
W. E. Belcher Lbr. Co., Centerville	M	30	X	X		X	X	DT		X	X	X			X					
A. B. Carroll Lbr. Co., Hurtsboro—See adv. p. 83	M	25	X			X	X											BR		
Clarke County Lbr. Mills, Thomasville	W		X	X		X	X	DT		X	DP	X	HC	FI	X			BR	C	0
Dadeville Lumber Co., Dadeville	M	20	X	X		X	X	DT		X	D	X	C					B	C	
F. M. Downing Lbr. Co., Gordo	MW	15	X			X	X	T			D									P
Foshee Lbr. Co., Box 544, Montgomery	M	12	X	X		X	X								C					
Grayson Lbr. Co., Birmingham	W		X	X			X	D			X	X								
Gulf Lbr. Co., Mobile	M	48	X	X			X	DT			X	X		FI				R	C	
Hallett Mfg. Co. Inc., Box 171, Mobile	M	8	X	X	X	X	X	DT	C	X	XD	XC	H	F			LK	BR	C	1
Jefferson Lbr. Co., Birmingham	MW	45	X	X				DT			X	X							C	
Kentwood Lbr. Corp., Birmingham	MW		X			X	X	DT			XD	X	HC	F	C			RB	C	
W. M. McGowin Lbr. Co., Pine Apple—See adv. p. 85	M	18	X			X	X				DP	X	C					R	C	
Miller & Co., Inc., Selma—See adv. p. 305	M	50	X	X	X	X	X	DT		X	XD	X	H		C			B		1
T. R. Miller Mill Co., Brewton	M	25	X	X		X	X	DT	C	X	X	X		I	X			BR	CT	2
Nettles Lbr. Co., Land	M	18	X	X			X	DT			X	X	XD							
Parnell Lbr. Co., Pine Hill	MW		X		X	X	X	D		X	XD	X	H							
Pine Plume Lbr. Co., Montgomery—See adv. p. 89	MW	40	X	X		X	X	D			XC	X	C	FI	XC			RB	C	
Scotch Lbr. Co., Fulton—See adv. p. 77	M	25	X	X	X	X	X	DT		X		X	H	FI	X			B	C	
Shepherd Lbr. Corp., Montgomery	M	35	X			X	X	D			X	X			C				C	
Sims Lumber Co., **Selma**	M	8	X	X		X	X	D		X										
Smith Lbr. Co., Red Bay	M	25	X		X	X	X	DT	C		XP	X	C	FI	X					
W. C. Smith Lbr. Co., Montgomery 3	W		X	X		X	X	DT	L			X	HC	I	X			BR		
W. T. Smith Lbr. Co., Chapman—See adv. p. 320	M	60	X	X	X	X	X	DT	L	X	X	X	H	FI	X				C	
M. W. Smith Lbr. Co., Jackson	M	30	X	X		X	X	DT			X	X		I						
Steel City Lbr. Co., Birmingham 3	W		X	X	X	X	X	DT	L	X	XC	X	H	FI	X			BR	CT	0
Stringfellow Lbr. Co., Birmingham	MW	25	X	X		X	X	DT	L	X	X	X	HC	FI	XC			BR	CT	
Stutts Lbr. Co., Inc., Thomasville—See adv. p. 86	M	22	X	X	X	X	X	DT	L	X	XC	X								
Stutts Sawmill Co., Inc., Thomasville—See adv. p. 86	M	18	X	X	X	X	X	DT	L	X	XC	X								
Summerville Bros. Lbr. Co., Aliceville	M	10	X			X		D							C			B		
J. W. Wells Lbr. Co., Montgomery—See adv. p. 88	MW	100	X	X	X	X	X	DT						I						
Wood Lbr. Co., Birmingham	MW		X	X	X	X	X	DT		X	VC	X	HC	FI	XC	X		BR	CT	0
ARKANSAS																				
Arkansas Lbr. Co., Little Rock—See adv. p. 87	W		X			X	X	D		X	XD	X	H							
Bradley Lbr. Co. of Ark., Warren—See adv. p. 48	MW	50	X		X	X	X	D	C	X	XD	X	H	FI	X	X				C
Cook Co., A. B., Malvern	M		X				X	D		X	X	X	H							
Crossett Lbr. Co., Crossett	M	60	X		X	X	X	DT	L	X	X	X	H	FI	X	X			T	
Fordyce Lbr. Co., Fordyce—See adv. p. 313	M	40	X		X	X	X	DT	L	X	X	X	H	FI	X	X			T	
Gurdon Lumber Co., Gurdon—See adv. p. 321	M	25	X		X	X	X				XD	X	HC	F	C					
Ozan Lbr. Co., Prescott—See adv. p. 65	M	25	X			X	X	D	L	X	X	X		F	X		L			
M. H. Pierce Lbr. Co., Morrilton	M	30	X			X	X	DT			X	X							C	
Southern Lbr. Co., Warren	M	45	X			X	X	DT	L	X	X	X	H	FI	X					
Southern Pine Lbr. Co. (See Texas Listing)																				
Waldo Hardwood Co., Waldo	M	5	X			X	X	DT			X							B		
Williams Mfg. Co., Sheridan	MW	25	X			X	X	T				X		FI						
DISTRICT OF COLUMBIA																				
Paul B. Kern Lbr. Co., Washington	W		X	X	X	X	X	D	C	X	X	X	H	I	C		K	BR		0

P—Posts O—Other Softwoods 1—Cypress and Poplar Siding 2—Pressure Treated Forest Products C—Cypress Siding

Southern Pine, Cypress, Hardwoods, Specialties

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	Shortleaf Yellow Pine	Longleaf Yellow Pine	Cypress	Southern Hardwoods	Yard & Shed Stock	D—Dimension T—Timbers	L—Lath C—Cedar Closet Lining	Interior Trim & Mouldings	X—Pine Bev. Sd. D—Drop Sd. C—Cyp. Sd. P—Poplar Sd.	Flooring X—Pine. C—Cypress	H—Hardwood Flooring C—Hardwood Constr. Boards	F—Factory Lumber I—Industrial Cut Stock	X—Box Shook & Crating C—Crating Only	K. D. Window & Door Frames	L—Log Cabin Siding K—Knotty Paneling	R—Roofers. B—Boards	C—Car Material T—Treated Stock	Other
FLORIDA																				
The Alger-Sullivan Lbr. Co., Century—See adv. p. 83	M			X			X	DT		X	XC	XC								EM
Brooks-Scanlon Inc., Foley	M	100		X			X	DT	L	X	X	X		I					CT	
Cummer Sons Cypress Co., Jacksonville	M	15			X		X	DT		X	C	C		F	X		LK	B		S
Foley Lbr. Industries, Jacksonville 1	MW	50	X	X	X	X	X	DT	L	X	DC	XC	H	F			LK	B	CT	S
C. J. Jones Lbr. Co., Everglades	M	12		X	X			T			X	X		I	X				C	
Lee Tidewater Cypress Co., Perry	M	35			X		X	DT						FI	X					
Neal Lbr. & Mfg. Co., Blountstown	M	12	X	X			X	DT			D	X								
Peavy-Wilson Lbr. Co., Holopaw	M	25		X	X		X	DT			XC	X		FI					C	
Putnam Lbr. & Export Co., Jacksonville—See adv. p. 89	W		X	X	X	X	X	DT	L	X	X	X	H	FI	C	X		B	CT	
Thomas Lbr. & Mfg. Co., Quincy	M	12	X	X		X	X	D	L	X	X	X	H	X	X	X	X	B	C	
GEORGIA																				
Alexander Bros. Lbr. Co., Columbus	M	15	X			X	X	D												HC
W. R. Altman Lbr. Co. Inc., Sylvania	M	10	X	X	X	X		T		X	X	X						R		
Atlanta Oak Flooring Co., Atlanta	MW		X		X	X			C	X		X	H	FI			K	B	C	G
Augusta Hardwood Co., Augusta	M	20	X	X	X	X	X	DT		X	XP	X						BR		
J. N. Bray Lbr. Co., Valdosta	M	10	X	X			X	DT		X	D	X						R		
Campbell Coal Co., Box 1498, Atlanta 1	MW	10	X	X		X	X	DT		X	XD	X		FI	XC	X	K	B	C	
Chatsworth Lbr. Co., Chatsworth	M	10	X			X	X	DT			XP	X		FI						N
Chattahoochee Valley Lbr. Co., La Grange	M	12	X			X	X													HC
Dolan Lbr. Co., Augusta	MW	40	X	X		X		T			D				X			BR		
Georgia-Pacific Plywood & Lbr. Co., Augusta—See adv. p. 40-41	MW	250	X	X	X	X	X	DT		X	XD	X	H	FI	C		K	RB	CT	
Mose Gordon Lbr. Co., Commerce	M	30	X			X	X	DT			D	X							C	
Hancock Lbr. Co., Quitman	M	30	X	X		X	X	DT		X	X	X						B	C	
Jeffreys-McElrath Lbr. Co., Macon	M	45	X			X	X	DT		IT	X	X		F	X			R		
McCulloch Lbr. Co., P. O. Box 771, Atlanta—See adv. p. 88	W		X	X	X	X	X	DT	C		XC	X	HC		C		K	BR	CT	HC
Northcutt Lbr. Sales Corp., Sandersville	W		X	X	X	X	X	D												
Reynolds Bros. Lbr. Co., Albany	M	15	X		X	X		T		IT	X				X			R		
Reynolds & Manley Lbr. Co., Savannah—See adv. p. 20	MW	30	X	X	X	X	X	DT			XC	X			C			BR	C	
J. W. Starr & Sons Lbr. Co., Atlanta	M	25	X	X		X		DT			X			FI	X		K	RB		
Sullivan Lbr. Co., Box 22, Preston	M	15	X			X	X				X	X			X					
ILLINOIS																				
Graham Lbr. Co., Chicago 4	W		X	X	X	X	X	DT		X	X	X	H	F	X				C	SH
Edward Hines Lbr. Co., Chicago 2—See adv. p. 14	MW	140	X	X	X	X	X	DT		X	X	X	H	FI	C	X	K	BR	C	O
Knudson & Mercer Lbr. Co., Chicago 4—See adv. p. 78	W		X				X	DT		X	X			FI		X				
KANSAS																				
Frank Paxton Lbr. Co., Kansas City 3	W		X		X	X							H	F						SH
KENTUCKY																				
Brown Lbr. Co., Louisville	W	60	X	X	X	X	X	DT		X	D	X							CT	
Mengel Co., Louisville 1—See adv. pp. 13, 181	M	6			X	X														YG
McCracken & McCall, Inc., Lexington—See adv. p. 67	MW	5									P		C							
Stearns Coal & Lbr. Co., Stearns—See adv. p. 67	M	15	X			A	X	D												
LOUISIANA																				
J. A. Bentley Lbr. Co., Zimmerman—See adv. p. 78	M	18		X				DT	L		X	X		F					C	
Clinton Band Mill, Inc., Clinton	M	6	X		X	X		DT	C		XD		H		C			BR	C	
Colfax Lbr. & Creosoting Co., Colfax	M	10	X			X	X	DT			X	X	C						T	
Crowell Long Leaf Lbr. Co., Inc., Long Leaf—See adv. p. 71	M		X	X			X	DT		X	X	X		I						
Davis Bros. Lbr. Co., Ansley—See adv. p. 68	M	15	X			X		DT		X	X	X								

N—Northern White Pine
HC—Hardwood Crating Stock
O—Other Softwoods
S—Cypress Shingles
EM—End-matched Stock
G—Glued-up Dimension
YG—Doors, Also Glued-up Dimension
SH—Other Softwoods and Hardwoods

Southern Pine, Cypress, Hardwoods, Specialties

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	Shortleaf Yellow Pine	Longleaf Yellow Pine	Cypress	Southern Hardwoods	Yard & Shed Stock	D—Dimension T—Timbers	L—Lath C—Cedar Closet Lining	Interior Trim & Mouldings	X—Pine Bev. Sd. D—Drop Sd. C—Cyp. Sd. P—Poplar Sd.	Flooring X—Pine. C—Cypress	H—Hardwood Flooring C—Hardwood Constr. Boards	F—Factory Lumber I—Industrial Cut Stock	X—Box Shook & Crating C—Crating Only	K. D. Window & Door Frames	L—Log Cabin Siding K—Knotty Paneling	R—Roofers. B—Boards	C—Car Material T—Treated Stock	Other
LOUISIANA—Continued																				
Frost Hardwood Floors Inc., Shreveport	M	40							C				H						T	
Frost Lbr. Industries, Inc., Shreveport	M	125	X		X	X	X	DT	C	X	XD	X	HC	FI	X	X	L	BR	CT	
H. D. Foote Lbr. Co., Alexandria	M	14	X	X		X	X	DT			X	X	C	FI				B	C	
La. Cypress Lbr. Co., Ponchatoula	M				X															
La. Long Leaf Lbr. Co., Fisher	M	25	X			X	X	D		X	X	X							C	
Mansfield Hardwood Lbr. Co., Shreveport	M	60	X		X	X	X	DT		X	X	X		I	XC	X	K	RB	C	
Roy O. Martin Lbr. Co., Castor	M	10	X		X	X	X	DT				X								VL
McCarroll Lbr. Co., Denham Springs	M	12	X		X	X		DT		X	X	X								
Thomas Lbr. Co., Winnfield	M	20	X	X			X	DT		X	X	X							C	
Urania Lumber Co., Urania—See adv. p. 72	M	18	X	X	X	X	X	DT		X	X	X	C	F					C	
J. P. Voss Lbr. Co., Dubach	M	10	X		X	X		DT			X	X						B		
Walthall Lbr. Co., Hammond	M	4	X	X				T		X	X	X		F					C	
Woodard Walker Bowen, Inc., Shreveport—See adv. p. 84	W		X		X	X	X	DT		X	X	X		I	X				C	
MARYLAND																				
Taylor & Newcomb, Inc., Catonsville-Baltimore 28	W		X	X		X	X	DT		X	X	X						BR		0
MASSACHUSETTS																				
Atlantic Lbr. Co., Boston	MW	50	X	X	X	X			C											
MISSISSIPPI																				
Belmont Lbr. Co., Charleston	M	12	X				X	T							C				C	
Burdette Lbr. Co., Meridian	MW	25	X	X		X	X	DT	L					FI						
Central Lumber Co., Brookhaven	M	10	X			X	X	DT		X	X	X		I	C			B		
Corinth Planing Mill Co., Corinth—See adv. p. 80	MW	15	X			X	X	D			XD	X			C			BR		3
Crosby Lbr. & Mfg. Co., Crosby	M		X			X	X	DT		X	X	X	H	FI	X				C	
L. N. Dantzler Lbr. Co., Perkinston	M	12	X	X				DT			D	X								
Deemer Lbr. Co., Deemer	M	12	X			X	X	DT			X				X					
A. DeWeese Lbr. Co., Philadelphia	M	20	X			X	X	D			DP	X	C	FI				B	C	
D. L. Fair Lbr. Co., Louisville—See adv. p. 310	M	30	X			X	X	DT	L	X	XP	X	H	FI		X				
C. L. Gray Lbr. Co., Meridian	M	15	X			X	X	DT			D	X	C					B		
J. M. Griffin & Sons, Inc., Newton	M	18	X			X	X	D		X	XD	X	FC		X		K	B	C	3
Henderson-Molpus Co., Philadelphia	M	12	X			X	X	DT		X	DP	X		FI	X	X				
Houston Bros., Vicksburg	M	10	X		X	X	X	DT			PC	X			X					
J. M. Jones Lbr. Co., Natchez	MW	30	X		X	X	X	DT			X	X	HC	FI	C			BR	C	
King Lumber Industries, Canton	M		X		X	X	X	DT	L	X	X			FI	X				T	
C. E. Klumb Lbr. Co., Crystal Springs—See adv. p. 82	W		X	X			X	DT			X	X						BR	C	
S. E. Lackey Lbr. Co., Forest—See adv. p. 88	M	18	X			X	X	DT		X	XD	X	C	FI	XC			B		3
Phillips-Rhyne Lbr. Co., Brookhaven	MW		X	X	X	X		DT	C	X	X	X	HC	I	X	X		BR	C	P
Stewart-Farris & Myers, Lbr. Co., Morton	M	15	X			X	X	D		X	X	X	C		X	X				2★
Wallin Lbr. Co., Columbus	M		X		X	X	X	D		X	XD	X								
Wax Lbr. Co., Woodville	M	15	X		X	X		DT			D	X								
Wogan-Wilson Land & Lbr. Co., Meridian	MA	18	X	X		X	X	DT			DP	X	C		C			B	C	
MISSOURI																				
Caddo River Lbr. Co., Kansas City	MW	45	X				X	DT	L	X	X	X		FI					C	
Canthook Lbr. Co., St. Louis	MW		X		X	X								FI	X					
Dierks Lbr. & Coal Co., Kansas City—See adv. p. 322	M	100	X			X	X	DT	L	X	X	X	H	I	X	X	L	B	C	
Exchange Sawmills Sales Co., Kansas City 6	W		X		X	X	X	DT		X	X	X	H	FI	X				C	
W. T. Ferguson Lbr. Co., St. Louis 1—See adv. p. 87	MW	75	X	X	X	X	X	DT	L		XC	X	HC	FI	X			BR	CT	1

★—Furniture Dimension Stock
0—Other Woods
VL—Veneer Logs
P—Plywood
MA—Mfrs. Agt.
2—Boxes and Box Shook
3—Poplar Siding
1—Red Cedar Siding and Shingles, Poles and Piling

Southern Pine, Cypress, Hardwoods, Specialties

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	Shortleaf Yellow Pine	Longleaf Yellow Pine	Cypress	Southern Hardwoods	Yard & Shed Stock	D—Dimension T—Timbers	L—Lath C—Cedar Closet Lining	Interior Trim and Mouldings	X—Pine Sdg. D—Drop Sdg. C—Cyp. Sdg. P—Poplar Sdg.	Flooring X—Pine. C—Cypress	H—Hardwood Flooring C—Hardwood Constr. Boards	F—Factory Lumber I—Industrial Cut Stock	X—Box Shook & Crating C—Crating only	K.D. Window & Door Frames	L—Log Cabin Siding K—Knotty Paneling	R—Roofers.* B—Boards	C—Car Material T—Treated Stock	Other
MISSOURI—Continued																				
Fleishel Lbr. Co., St. Louis—See adv. p. 58	MW	50	X	X	X	X	X	DT	L	X	XC	XC		FI	XC		LK		C	
Hill-Behan Lbr. Co., St. Louis—See adv. p. 89	MW		X				X	D												
Long-Bell Lbr. Co., Kansas City 6	MW		X		X	X	X	DT		X	X	X	H	FI	C			BR	CT	
Midland Valley Lbr. Co., St. Louis 3	MW	8	X		X	X		DT	C		XD		H		C			BR	C	4
Sabine Lbr. Co., St. Louis 1	M	75	X			X	X	DT		X	X	X		FI	X					EM
H. E. Webster Lbr. Co., Kansas City 6	W		X	X	X	X	X	DT		X	X	X	H	FI						
NEW YORK																				
Atlantic Lbr. Co., Buffalo	MW	50	X	X	X	X			C											
Cotton & Hanlon, Odessa	MW	30	X			X	X	D					H	F				BR		1
NORTH CAROLINA																				
L. N. Bagnal, P. O. Box 2896, Winston-Salem	W		X	X	X	X	X	D		X	X	XC		FI	XC			R		O
P. M. Barger Lbr. Co., Statesville	W		X	X	X	X	X	DT	C	X	XP	X	H		C	X	LK	BR		
Geo. C. Brown & Co., Greensboro—See adv. p. 84	M								C											S
C. K. Callaham & Sons Lbr. Co., Inc., P. O. Bx. 1, Charlotte 1	MW		X	X	X	X	X	DT		X	X	X	H				K	R		
Carr Lbr. Co., Pisgah Forest	M	8							L				H							3
J. E. Elrod Lbr. Co., Charlotte—See adv. p. 72	MW		X	X	X	X	X	DT	L	X	X	X	H	F	X				T	SD
Eureka Lbr. Co., Washington	M	15	X			X	X					X						BR		
Greene Bros. Lbr. Co., Elizabethtown	M	15	X		X	X	X					XC	H					BR		EM
Hutton & Bourbonnais Co., Hickory—See adv. p. 67	M		X			A		DT		IT	X	X			X				C	
Jeffreys-Myers Mfg. Co., Oxford	M	30	X			X		DT			D	X			X			R		
McLeod & Sinclair, Laurinburg	M	15	X	X				DT		IT	X	X						R		
Oakboro Lbr. Co., Lenoir	M	10	X			A	X	D			XD	X		I	X		K	R		SD
John C. Shepherd Lbr. Corp., Charlotte 1	W		X	X	X	X	X	DT		X	XC	X	HC	FI	X			B	CT	2
South Atlantic Lbr. Co., Greensboro	MW	40	X		X	X								I	X			R		
W. M. Storey Lbr. Co., Southern Pines	MW		X			X	X	DT			XD	X		FI	X			BR		
Triplett Lbr. Co., Lenoir	W		X	X	X	X	X	DT		X	X	X	H	FI	X		K	BR	C	A
PENNSYLVANIA																				
Babcock Lbr. Co., Pittsburgh 19	MW	40	X	X	X	X	X	DT	C	X	C	X	HC	F	XC			BR	C	
Wistar, Underhill & Co., Philadelphia	W		X		X	X	X	DT		X	X	X								
SOUTH CAROLINA																				
Argent Lbr. Co., Hardeeville	M	18	X	X	X	X	X			X	XC	X		I	X		LK	R	C	
Brooklyn Cooperage Co., Sumter	M	30			X	X														
G. F. League Lbr. Co., Greenville	W		X	X	X	X	X	DT		X		X		FI						
Lexington Lbr. Co., Columbia	M	36	X	X	X	X		T		X	X	X						R		J
Lightsey Bros., Miley—See adv. p. 66	M	18	X	X	X	X	X	DT		X	X	X	H					BR		
Mullins Lbr. Co., Mullins	M	18	X		X	X		T		X	X	X			C			R		J
Santee River Hardwood Co., St. Stephen	M	12	X		X	X	X	T			XC								T	
Palmetto Lbr. Sales Co., Spartanburg	W		X			X	X	D						FI				BR		
Joe Virgeson Lbr. Co., Inc., Columbia—See adv. p. 74	W		X		X	X	X	D	C	X	X	X		I						
TENNESSEE																				
Anderson Tully Co., Memphis 10	M		X		X	X					P		H	FI	X					PG
E. L. Bruce Co., Memphis 1—See adv. p. 307	M	100	X		X	X	X	DT	C	X	XD	X	H	FI	C		L	BR	C	EM
Frank A. Conkling Co., Memphis 3	MW	15			X	X														P
Nickey Bros., Memphis 12	MW	20			X	X		D	C	X	XC		H							

EM—End Matched T.P. Fig. & Sheathing SD—Sash & Door Cut Stock P—Plywood 1—Pine Mill, Mayo, Va. 2—Nosed Stopping and Finish
O—Other woods S—Specialist in Cedar J—Jambs A—Appalachian White Pine, Box Shook, R. R. Materials
B—Appalachian Hardwoods 4—Pine & Hardwood Cross and Switch Ties PG—Plywood & Glued-up Stock

Southern Pine, Cypress, Hardwoods, Specialties

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	Shortleaf Yellow Pine	Longleaf Yellow Pine	Cypress	Southern Hardwoods	Yard & Shed Stock	D—Dimension T—Timbers	L—Lath C—Cedar Closet Lining	Interior Trim & Mouldings	X—Pine Sdg. D—Drop Sdg. C—Cyp. Sdg. P—Poplar Sdg.	Flooring X—Pine. C—Cypress	H—Hardwood Flooring C—Hardwood Constr. Boards	F—Factory Lumber I—Industrial Cut Stock	X—Box Shook & Crating C—Crating only	K.D. Window & Door Frames	L—Log Cabin Siding K—Knotty Paneling	B—Boards R—Roofers	C—Car Material T—Treated Stock	Other
TENNESSEE—Continued																				
Riggs-Buttram Lbr. Co., Athens	M	12	X			X		DT										B		
D. M. Rose & Co., Knoxville	M								C	X	X		H	I		X				G
Shannon Bros. Lbr. Co., Memphis	M	14			X	X	X	T						F						
James E. Stark Co., Memphis 10	M	12			X	X	X	DT			C	C		FI						G
Vestal Lbr. & Mfg. Co., Knoxville—See adv. p. 84	M	40	X	X	X	X	X	T												
Woods Lbr. Co., Memphis	MW	20			X	X		T												
TEXAS																				
Angelina County Lbr. Co., Keltys—See adv. p. 86	MW	40	X			X	X	DT	L	X	X						K		C	
Boettcher Lbr. Co., Huntsville	MW	24	X				X	DT		IT	X	X							C	
W. T. Carter & Bro., Houston	M	60	X			X	X	DT		X	X	X			C					FJ
Edens-Birch Lbr. Co., Corrigan	M	25	X	X		X	X													
Haslam Lbr. Co., Haslam	M	12	X			X	X	DT		X	X	X	H		X					F
Lacy H. Hunt Lbr. Co., Nacogdoches	MW	18	X			X	X	DT			X	X		F						
Kirby Lbr. Corp., Houston—See adv. p. 78	MW	100	X		X	X	X	DT		X	X	X	H	I				B	C	
Sabine Lbr. Co., Houston	M	50	X			X	X	DT		X	X	X		FI	X					EM
Southern Pine Lbr. Co., Texarkana	M	90	X	X	X	X	X	DT		X	X	X	H	I	X		L	B	C	G
J. E. Stone Lbr. Co., Nacogdoches	M	30	X			X	X	DT		X	X	X			C				C	
T. O. Sutton & Sons, Chireno	M	10	X			X	X	DT			X	X						B		
Texas Creosoting Co., Orange—See adv. p. 74								T											T	CL
VIRGINIA																				
Barnes Lbr. Corp., Charlottesville	M	39	X			X		DT		X		X	H	I		X				
M. T. Blassingham & Co. Inc., Norfolk	D*		X	X	X	X	X	DT		X	X	X	HC	FI	C	X	K	BR	CT	CL
Boydton Mfg. Co., Boydton	M	12	X			X		DT					H		X					
Burruss Land & Lbr. Co., Lynchburg	MW	65	X			X	X	DT						F				BR	C	S
Camp Mfg. Co., Franklin	M	30	X		X	X	X			X	X	X	H		X			BR		
Colonial Pine Co., Petersburg	M	10	X					D							X			BR		
Williams & McKeithan Lbr. Co., Lynchburg	MW	100	X	X		X	X	DT			X	X	C	F	X			BR		

F—Finish
J—Jambs
S—Shiplap
EM—End-Matched Y.P. Flg.
G—Glued-up Stock
P—Plywood
CL—Creosoted Lumber, Cross Arms, Piling, Poles, Ties.
D*—Distribution Yard

Ponderosa Pine, Sugar Pine, White Fir, Incense Cedar, Douglas Fir, Redwood

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	Ponderosa Pine	Sugar Pine	W—White Fir I—Incense Cedar	Douglas Fir (Inland) Redwood	Yard and Shed Stock	D—Dimension T—Timbers	L—Lath P—S.R. Pickets	Mouldings	S—Bevel Siding F—Flooring	Factory Lumber	I—Industrial Cut Stock G—Glued-Up Stock	Sash and Door Cut Stock	Box Shook and Crating	K. D. Window and Dr. Frames	Sash, Doors, Screens	C—Log Cabin Siding K—Knotty Paneling	Other	
ARIZONA																				
Navajo Tribal Sawmill, Window Rock	M	12	X					X	DT				X							
Saginaw & Manistee Lbr. Co., Flagstaff	M	45	X					X	D				X			X				
Southwest Lbr. Mills, Inc., McNary	M	100	X			X		X	D		X	S	X	I		X			K	IT
CALIFORNIA																				
Angels Box & Lbr. Co., Angels Camp	M	12	X	X	WI	X		X	DT				X							

IT—Interior Trim

Ponderosa Pine, Sugar Pine, White Fir, Incense Cedar, Douglas Fir, Redwood

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	Ponderosa Pine	Sugar Pine	W—White Fir I—Incense Cedar	Douglas Fir	Redwood	Yard and Shed Stock	D—Dimension T—Timbers	L—Lath P—S.R. Pickets	Mouldings	S—Bevel Siding F—Flooring	Factory Lumber	I—Industrial Cut Stock G—Glued-Up Stock	Sash and Door Cut Stock	Box Shook and Crating	K. D. Window & Door Frames	Sash, Doors, Screens	C—Log Cabin Siding K—Knotty Paneling	Other
CALIFORNIA—Continued																				
Paul Bunyan Lbr. Co., Susanville—See adv. p. 70	M		X		WI			X	D		X	S	X	I						
Byles-Jamison Lbr. Co., Box 1666, Fresno	M	15	X	X	W			X					X							
California Door Co., Diamond Spring	M	30	X	X	WI	X		X	D				X			X				
Cal. Sugar & West. Pine Agcy., San Francisco—See adv. p. 82	W		X	X	WI	X		X	D		X		X	I	X	X				
Clover Valley Lbr. Co., Loyalton	M	40	X		W	X		X	DT		X		X			X				RT
Crowley Lumber Co., Inc., Richfield	M	20	X	X							X		X			X				
Diamond Match Co., Chico	M	52	X	X	WI	X		X	DT		X	S	X	IG	X	X	X	X	K	
*Dolbeer & Carson Lbr. Co., 465 Calif. St., San Francisco 4	M	40					X	X	DT		X	S	X						C	
Hammond Lbr. Co., San Francisco 6	M	130					X	X	D		X	S								7
*Holmes Eureka Lbr. Co., San Francisco 4	M						X	X	DT		X	S	X							
Hughes Bros., Foresthill	M	9	X	X	WI	X		X	DT			SF	X							
Indian Head Lbr. Co., Pittville	M	12	X		I			X	D		X		X	I						
Kent Lbr. Co., San Francisco 4	W		X	X	X	X		X	D		X		X		X				CK	B
Lassen Lbr. & Box Co., San Francisco—See adv. p. 70	M	50	X		W			X			X		X			X				
Long-Bell Lbr. Co., Weed	M	100	X		W			X	D	L	X	S	X	IG	X	X	X	X	CK	OP
Michigan-California Lbr. Co., Camino—See adv. p. 59	M	25	X	X	WI	X		X					X			X				PL
Mt. Shasta Pine Mfg. Co., Mt. Shasta	M	20	X	X	W	X		X	D				X			X				
McCloud River Lbr. Co. (See Shevlin-McCloud, Minneapolis)																				
Mt. Whitney Lbr. Co., Box 2946, Los Angeles	M	25	X	X	WI			X	DT	L			X	I	X					
Northern Redwood Lbr. Co., Korbel	M	30				X	X	X	D				X							TS
Pacific Lbr. Co., 100 Bush St., San Francisco 4	M	120					X	X	D		X	S	X	IG						
Penberthy Lbr. Co., Los Angeles	W		X	X	X			X					X			X				IL
Pickering Lbr. Corp., Standard	M	75	X	X	WI			X	D		X	S	X	I	X	X			CK	
Pine Logging Co. of Calif., Box 1086, Fresno	MW	15	X	X	WI			X	D				X							
Quincy Lbr. Co., Inc., Quincy	M	35	X	X	W	X		X	D		X		X			X			K	PL
Redwood Manufacturers Co., Pittsburg	MW		X	X		X	X	X	DT		X	S								4
Redwood Sales Co., San Francisco 4	MW						X	X	DT	LP	X	SF							C	
Sacramento Box & Lbr. Co., Box 1282, Sacramento 6	MW	35	X	X	WI	X		X	D				X			X				
Scott Lbr. Co., Inc., Burney	M	40	X	X	W	X		X	DT			SF	X							PL
Ralph L. Smith Lbr. Co., Anderson (Sales K. C., Mo.)—See p. 85	M	70	X	X	WI	X		X	D			S	X							
Ralph L. Smith Lbr. Co., Canby (Sales K. C., Mo.)—See p. 85	MW	60	X		W			X	D		X	S	X	I	X	X				P
E. J. Stanton & Son, Los Angeles 54—See adv. p. 85	W		X	X	W	X	X	X	D		X	SF	X						CK	56
Stokes Lbr. Co., San Francisco 5	W		X	X	W	X	X	X	DT	L	X		X						K	
Tarter, Webster & Johnson, Inc., San Fran.—See adv. p. 73	MW	25	X	X	WI	X		X	DT		X	S	X		X	X		X		PL
Ukiah Pine Lbr. Co., Potter Valley	M	20	X	X	W			X	DT				X							RT
Union Lbr. Co., Crocker Bldg., San Francisco 4	MW	100	X	X	W	X	X	X	DT			SF	X	I					C	#
Wallace Mill & Lbr. Co., Paramount—See adv. p. 82							X	X				S	X							
Wendling-Nathan Co., San Francisco 11—See adv. pp. 12, 81	W		X	X	W	X	X	X	DT	L	X	SF	X	I						6
West Side Lbr. Co., Tuolumne—See adv. p. 69	M	60	X	X	WI			X	D				X			X				PL
Winton Lbr. Sales Co., Martell (also Minneapolis)—See adv. p. 19	M	100	X	X	WI	X		X	D		X	S	X	I	X	X	X			
A. K. Wilson Lbr. Co., Los Angeles	W		X	X			X	X	DT	LP	X	SF	X	I					C	
Wuichet Lbr. Co., Los Altos	W		X	X	W	X		X	D				X		X					PL
IDAHO																				
Atlas Tie Co., Coeur d'Alene	M	16	X		X	W	FL	X	DT											
Boise-Payette Lbr. Co. (See Weyerhaeuser, St. Paul)																				
Brown's Tie and Lbr. Co., McCall	M	19	X			WE	FL	X	DT			F	X						CK	

P—Plywood
6—Red Cedar Shingles and Douglas Fir Plywood
W°—Wholesale Distr. Yd.
RT—Railroad Ties
PL—Pattern Lumber
TS—Tank Stock
OP—Other Woods and Plywood
RS—Redwood Shingles
4—Redwood and Cedar Shingles and Douglas Fir Plywood
‡—R.R. Ties, Redwood Shingles, Tank stock
B—Boards
56—Philippine Mahogany
Red Cedar Shingles, Douglas Fir Plywood
7—Railroad Ties and Tank Stock
IL—Industrial Lumber

Ponderosa Pine, Sugar Pine, Idaho White Pine, White Fir, Engelmann Spruce, Fir and Larch

IDAHO—Continued	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	Ponderosa Pine	Sugar Pine	Idaho White Pine	W—White Fir E—Engelmann Spruce	F—Fir L—Larch	Yard & Shed Stock	D—Dimension T—Timbers	L—Lath P—SR Pickets	Mouldings	S—Bevel Siding F—Flooring	Factory Lumber	I—Industrial Stock G—Glued-up Stock	Sash & Door Cut Stock	Box Shook & Crating	K. D. Window & Door Frames	Sash, Doors & Screens	C—Log Cabin Siding K—Knotty Paneling	Other
Craig Mountain Lbr. Co., Winchester	M	25	X			W	FL	X	D	LP		F								
Hallack and Howard Lbr. Co., Cascade	M	25	X			E	FL	X	D	L	X	FS								
Kaniksu Forest Products, Inc., Priest River	M	18	X		X	E	FL	X	DT	L										RC
McFarland-Brown Lbr. Co., Sandpoint	M	15			X	E	FL	X	D			S							K	RC
Pack River Sales Co., Sandpoint—See adv. p. 77	MW	50	X		X	E	FL	X	D		X	SF	X	I	X	X			K	RC
Potlatch Forests, Inc. (See Weyerhaeuser, St. Paul)																				
Russell & Pugh Lbr. Co., Springston—See adv. p. 88	M	18	X		X	W	FL	X	DT	L	X	SF	X	I		X				RC
St. Maries Lbr. Co., St. Maries	M	25	X		X	WE	FL	X	DT	L	X	SF	X						CK	RC
White Pine Lbr. Co., Orofino	M	18	X		X	W	FL	X	D			S							K	
Winchester Box Co., Winchester	M		X								X			IG		X	X		K	
ILLINOIS																				
Cook County Lbr. Co., Chicago 28—See adv. p. 69	W		X				F	X	DT	LP		SF							CK	RC
Edward Hines Lbr. Co., Chicago 2—See adv. p. 14	MW	140	X	X	X	E	FL	X	DT	L	X	S	X	I	X				CK	O
Inland Lbr. Co., Chicago 2—See adv. p. 70	MW					E	F	X	D	L			X	I		X			C	
Knudson & Mercer Lbr. Co., Chicago 4—See adv. p. 78	W		X	X	X		FL	X	DT	L	X	SF						X		O
Metropolitan Lbr. Co., Chicago 24	W		X	X	X	WE	FL	X	DT		X	S	X	IG		X			CK	O
Midwest Jobbers, Inc., Chicago 8—See adv. p. 69	W		X								X						X	X		IP
Rinn-Scott Lbr. Co., Chicago 1—See adv. p. 76	W		X	X				X	DT		X	SF	X	IG	X	X	X	X		P
Wm. C. Schreiber Lbr. Co., Chicago 16	W		X	X	X	E	FL	X	D				X						K	P
Geo. J. Silbernagel, Chicago 3—See adv. p. 31	W		X	X	X	WE	FL	X	DT	LP	X	SF	X	IG	X	X	X	X	CK	O
KANSAS																				
Frank Paxton Lbr. Co., Kansas City 3	W		X	X	X	E	FL						X	I						P
MINNESOTA																				
Shevlin-McCloud Lbr. Co., Minneapolis—See adv. p. 78	M	300	X	X		W	F	X	D	LP	X	S	X		X	X			CK	
Weyerhaeuser Sales Co., St. Paul 1—See adv. pp. 62-63	M		X	X	X	WE	FL	X	DT	LP	X	SF	X	IG	X	X	X		CK	RC
Winton Lbr. Sales Co., Minneapolis 2—See adv. p. 19	MW	100	X	X		W	F	X	D		X	SF	X	I	X	X	X		CK	WW
MISSOURI																				
W. T. Ferguson Lbr. Co., St. Louis 1—See adv. p. 87	MW	75	X	X	X	WE		X	DT				X							
Long-Bell Lbr. Co., Kansas City 6	MW		X	X	X	W		X	D	L	X	SF	X	IG	X	X	X	X	CK	OP
Ralph L. Smith Lbr. Co., Kansas City—See adv. p. 85	MW	130	X	X	X	E	FL	X	D		X		X	I	X	X				P
MONTANA																				
Anaconda Copper Mining Co., Bonner—See adv. p. 66	M	100	X				FL	X	DT	L	X	SF	X	I		X			CK	
Kalispell Lbr. Co., Kalispell	MW	20	X			E	FL	X	DT		X	S								
J. Neils Lbr. Co., Libby—See adv. p. 60	M	80	X		X	E	FL	X	DT	L	X	SF	X	I	X	X			CK	IT
Somers Lbr. Co., Somers	M	40	X			E	FL	X	D	L	X	S								
F. H. Stoltze Land & Lbr. Co., Columbia Falls	M	21			X	E	FL	X	DT	L		SF							K	
NEW MEXICO																				
M. R. Prestridge Lbr. Co., Alamogordo—See adv. p. 15	M	22	X				F	X	DT		X		X							
Southwest Lbr. Co., Alamogordo	M	24	X			W	F	X	DT	L	X	S				X				
New Mexico Timber Co., Albuquerque	MW	75	X			WE	F			L	X								K	
OHIO																				
George N. Comfort Lbr. Co., Cleveland 14	W		X	X	X	WE	FL		DT	L	X	SF	X	I		X			CK	
Inter Lakes-Gulf Lbr. Co., Cleveland 15	W		X		X	E	FL	X	DT	L		SF		I		X				M
Malcolm & Associates, Cleveland 15—See adv. p. 82	W		X					X	D		X	SF								
OREGON																				
Alexander-Yawkey Lbr. Co., Prineville—See adv. p. 71	M	38	X					X	D		X	S	X	I		X			K	

P—Plywood BC—Red Cedar O—Other Softwoods & Hardwoods M—Myrtlewood
WW—Western White Spruce I—Interior Trim

Ponderosa Pine, Sugar Pine, Idaho White Pine, White Fir, Engelmann Spruce, Fir and Larch

OREGON—Continued	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	Ponderosa Pine	Sugar Pine	Idaho White Pine	W—White Fir E—Engelmann Spruce	F—Fir L—Larch	Yard & Shed Stock	D—Dimension T—Timbers	L—Lath P—SR Pickets	Mouldings	S—Bevel Siding F—Flooring	Factory Lumber	I—Industrial Stock G—Glued-up Stock	Sash & Door Cut Stock	Box Shook & Crating	K. D. Window & Door Frames	Sash, Doors & Screens	C—Log Cabin Siding K—Knotty Paneling	Other
American Box Corp., Lakeview	M	38	X			W		X	D		X	S	X	I		X			K	
Blue Mountain Mills, John Day	M	30	X				FL	X	D		X		X	I		X			K	
Brooks-Scanlon, Inc., Bend—See adv. p. 75	M	100	X					X	DT	LP	X	S	X	I	X	X			K	
Collins Pondosa Lbr. Co., Pondosa	M	20	X			W	FL	X	D	L		S							CK	
Contact Lbr. Co., Portland 4	W		X	X	X	WE	FL	X	DT	L	X	SF	X	IG	X	X	X	X	CK	IT
Crane Mills, Inc., Bly	M	15	X					X	D			S	X		X					
The Robert Dollar Co., Glendale	M	30	X	X			F	X	DT	L		F	X						K	I
Ewauna Box Co., S. 6th St., Klamath Falls	M	75	X			W		X	D	LP	X	S	X	I	X	X			CK	7
Firpine Products Co., Portland	W		X	X		WE	FL	X	DT		X	SF	X	IG	X	X	X	X	CK	
Fleishman Lbr. Co., Portland	MW		X	X	X	WE	FL	X	DT		X	SF	X	I	X					O
Gilchrist Timber Co., Gilchrist	M	50	X					X	D		X		X						K	
Goose Lake Box Co.—Sales by White Pine Lbr. Dist., Reno, Nev.	M	15	X					X			X		X			X				
Heppner Lbr. Co., Heppner	M	15	X					X	D		X	S	X						K	
Herman Brothers Lbr. Co., Prospect	M	12	X	X				X					X							I
Edward Hines Lbr. Co. (See Chicago Listing)—See adv. p. 14																				
Interstate Lbr. Sales, Eugene	W		X	X		W	F	X	DT	LP		SF	X	IG	X	X		X	CK	
Ivory Pine Co., Klamath Falls	MW	20	X	X		WE		X	D				X							
Klamath Basin Pine Mills Inc., Box 1051, Klamath Falls	M	50	X	X			F	X	D	L	X		X			X				
Kinzua Pine Mills Co., Kinzua—See adv. p. 17	MW	40	X				FL	X	D*	L	X	S		IG	X	X	X		CK	Y
Kogap Lbr. Industries, Medford—See adv. p. 70	M	30	X	X	X	W	F	X	DT				X						K	
Medford Corp., Medford—See adv. p. 32	M	70	X	X		W	F	X	DT		X	SF	X	I					CK	
A. Morrison Lbr. Co., Portland 5—See adv. p. 74	MW		X					X	D		X	S	X						K	
Mt. Emily Lbr. Co., La Grande	M	50	X				FL	X	D		X	S	X	I	X	X			K	Y
Ochoco Lbr. Co., Prineville	M	35	X				FL	X	D		X	S	X							
Oregon Lbr. Co., Baker—See adv. p. 43	M	35	X					X			X	SF		IG		X	X		K	
Oregon Trail Lbr. Co., The, Union	M	12	X				FL	X	D*				X							
Patrick Lbr. Co., Portland 5	W		X	X	X	WE	FL	X	DT		X	S	X	I	X	X			CK	
Pine Products Corp. (See Carl Soderberg Lbr., Spokane)																				
Ponderosa Mouldings, Inc., Redmond—See Metro Lbr., Chicago	M		X					X	D		X		X	I					CK	IT
Schmitt Bros. Lbr. Co., Grants Pass	M	22	X	X			F	X	D				X							I
Shaw Lbr. Co., Klamath Falls	M	35	X					X	D				X							
Edw. J. Sherman Lbr. Sales, Portland 4—See adv. p. 60	W		X	X	X			X	D		X	S	X	I	X	X				
Shevlin-Hixon Co. (See Shevlin-McCloud, Minneapolis)																				
R. L. Smith Lbr. Co., Klamath Falls (Sales K. C. Mo.)—p. 85	MW		X					X	D		X	S	X	I	X	X				P
So. Ore. Sugar Pine Co., Medford and Tiller	M	40		X	X		F	X					X							
Spalding & Son, Grants Pass	M	12	X	X			F	X					X							
Stoddard Lbr. Co., Baker	M	39	X				L	X		L	X	S	X						K	
Timber Products Co., Medford	MW	45	X	X		W	F	X	DT	L	X	SF	X	GI	X	X		X	K	P
Tite Knot Pine Mill, Redmond	M	30	X					X	D		X		X						K	
Van Deinse Lbr. Sales Corp., Portland 5—See adv. p. 80	MW	25	X	X	X	WE	FL	X	DT	L	X	SF	X	I					CK	
Warm Springs Lbr. Co., Warm Springs	M	35	X					X		LP			X							
Weyerhaeuser Timber Co. (See St. Paul)																				
PENNSYLVANIA																				
Babcock Lbr. Co., Pittsburgh 19	MW	40	X	X	X	WE	FL	X	DT		X	SF	X	G		X				
Wm. Schuette Co., 239 4th Ave., Pittsburgh	W		X	X	X	E	FL	X	DT		X	SF	X	IG		X	X	X	X	
SOUTH DAKOTA																				
Warren-Lamb Lbr. Co., Rapid City	M	14	X					X	D		X	SF		G		X			C	

I—Incense Cedar P—Plywood D*—Fir & Larch Only Y—Cut-to-Length Trim, Lawn & Porch Furniture 7—Linderman Jointed Stock RT—Railroad Ties IT—Interior Trim O—Other Woods

Ponderosa Pine, Sugar Pine, Idaho White Pine, White Fir, Engelmann Spruce, Fir and Larch

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	Ponderosa Pine	Sugar Pine	Idaho White Pine	W—White Fir E—Engelmann Spruce	F—Fir L—Larch	Yard & Shed Stock	D—Dimension T—Timbers	L—Lath P—SR Pickets	Mouldings	S—Bevel Siding F—Flooring	Factory Lumber	I—Industrial Stock G—Glued-up Stock	Sash & Door Cut Stock	Box Shook & Crating	K. D. Window & Door Frames	Sash, Doors & Screens	C—Log Cabin Siding K—Knotty Paneling	Other
TEXAS																				
Ponderosa Lbr. Co., San Antonio			X					X	D											
WASHINGTON																				
Biles-Coleman Lbr. Co., Omak—See adv. p. 194	M	48	X				FL				X			IG		X	X		K	WT
Bockmier Lbr. Co., Radio Cent. Bldg., Spokane	MW	20	X		X	E	FL	X	DT	L			X							
Cascade Lbr. Co., Yakima	M	65	X				F	X	DT			S	X			X				
Chelan Box & Mfg. Co., Chelan	M	24	X				F	X	DT				X			X				
Deer Park Pine Industry, Inc., Deer Park	M	40	X		X		FL	X	DT		X	SF	X	I	X	X	X		K	IT
Diamond Match Co., Newport	M	54	X		X	WE	FL	X	DT	L	X	SF	X						K	RC
Fred Draper Lbr. Co., Colville	M	12	X				FL	X	DT			SF	X							
J. G. Kennedy Lbr. Co., Seattle	W		X				FL	X	D		X	SF								
Long Lake Lbr. Co., Spokane	M	48	X		X	WE	FL	X	DT	L	X	S	X	I			X		K	WT
Mauk Seattle Lbr. Co., Seattle 1—See adv. p. 81	MW		X	X	X		FL	X	DT	L	X	SF	X	I		X			CK	IT
J. Neils Lbr. Co., Klickitat—See adv. p. 69	M	50	X				F	X	DT		X	SF	X	I	X	X			CK	
Nettleton Timber Co., Box 3305, Seattle 14	M				X			X												
Ohio Match Co., Box 115, Spokane	M	48			X	WE	FL	X	DT	L	X	S	X						K	
Peshastin Lbr. & Box Co., Peshastin	M	22	X		X	W	F	X	DT	L	X	SF	X	I		X			K	1
Schmitten Lbr. Co., Cashmere	M	15	X				F									X				
Carl Soderberg Lbr. Co., Spokane 8—See adv. p. 81	MW	40	X	X	X	E	FL	X	D		X	SF	X	I		X			CK	IT
Twin Harbors Lbr. Co., Aberdeen—See adv. p. 35	MW		X	X	X		FL	X	DT	LP	M	SF	X	I						0
Wales Lbr. Co., Spokane 8—See adv. p. 81	MW		X	X	X	WE	FL	X	DT				X							RC
Western Pine Mfg. Co., Spokane 7—See adv. p. 197	M	50	X		X		FL	X	DT	L	X		X	IG	X	X	X	X	K	1
White Pine Sash Co., Spokane			X		X			X			X			IG		X	X	Sc	K	WT
Zosel Lbr. Co., Oroville	M	6	X				FL	X	DT							X				
WISCONSIN																				
Metropolitan Lbr. Co., Milwaukee	W		X	X	X	WE	FL	X	DT	L	X	S	X	IG	X	X			CK	0

1—Interior Trim, Furniture, Boxes & Specialty Items WT—Wrapped Interior Trim IT—Interior Trim RC—Red Cedar O—Other Woods

Douglas Fir, West Coast Hemlock, Sitka Spruce, Western Red Cedar

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	D—Douglas Fir H—West Coast Hemlock	S—Sitka Spruce C—Western Red Cedar	Y—Yard Stock S—Shed Stock	D—Dimension T—Timbers	S—Select Structural Grades L—Long Timbers	M—Mouldings F—Flooring	S—Bevel Siding L—Log Cabin Siding	R—Red Cedar Shingles L—Lath	G—Gutter P—Plywood	S—Sash, F—Frames W—Window & Door Stock	S—Shop Lumber I—Industrial Cut Stock	R—Rough Clears G—Glued-up Stock	B—Boat & Ship Lumber C—Car Material	T—Turning Squares L—Ladder Stock	B—Box Shook & Crating T—Tank, Pipe and Silo Stock	P—Poles, Piling T—Treated Stock	A—Airplane Stock K—Knotty Paneling	Other
CALIFORNIA																				
Benson Lbr. Co., San Diego 12	MW	22	DH	C	YS	DT	SL							R	B		B	P		
W. E. Cooper Whise. Lbr. Co., Los Angeles 13—See adv. p. 76	W		DH	SC	YS	DT	SL	MF		R	P	S	S	R						0
Pope & Talbot, Inc., San Francisco 4	MW	284	DH		YS	DT							I					T		0
E. K. Wood Lbr. Co., San Francisco 11	MW	50	DH	SC	YS	DT				L										
Wendling-Nathan Co., San Francisco 11—See adv. pp. 12, 81	W		D	C	YS	DT		MF	S	RL	P		S	R				P	A	
ILLINOIS																				
Metropolitan Lbr. Co., Chicago 24	W		DH	SC	YS	DT		MF												
Geo. J. Silbernagel, 8 So. Mich., Chicago 3—See adv. p. 31	W		DH	SC	YS	DT	SL	MF	SL	RL	GP	SF	SI	RG		TL	BT		K	0
Wm. C. Schreiber Lbr. Co., Chicago 16	W		DH	S	YS	D					P		S							0

O—Other Woods

Douglas Fir, West Coast Hemlock, Sitka Spruce, Western Red Cedar

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	D—Douglas Fir H—West Coast Hemlock	S—Sitka Spruce C—Western Red Cedar	Y—Yard Stock S—Shed Stock	D—Dimension T—Timbers	S—Select Structural Grades L—Long Timbers	M—Mouldings F—Flooring	S—Bevel Siding L—Log Cabin Siding	R—Red Cedar Shingles L—Lath	G—Gutter P—Plywood	S—Sash F—Frames W—Window & Door Stock	S—Shop Lumber I—Industrial Cut Stock	R—Rough Clears G—Glued-up Stock	B—Boat & Ship Lumber C—Car Material	T—Turning Squares L—Ladder Stock	B—Box Shook & Crating T—Tank, Pipe and Silo Stock	P—Poles, Piling T—Treated Stock	A—Airplane Stock K—Knotty Paneling	O—Other
KANSAS																				
Frank Paxton Lbr. Co., Kansas City	W		D	S.							P		S							O
MINNESOTA																				
Weyerhaeuser Sales Co., St. Paul 1—See adv. pp. 62–63	M		DH	SC	YS	DT	SL	MF	SL	R	GP	FW	SI	RG	BC		BT	T	K	
Winton Lbr. Sales Co., Minneapolis 2—See adv. p. 19	MW	100	DH	C	YS	D		M	SL				S						K	O
MISSOURI																				
Canthook Lbr. Co., St. Louis 1	W		DH	S																
W. T. Ferguson Lbr. Co., St. Louis 1—See adv. p. 87	MW	75	DH	SC	YS	DT	SL	F	S	RL			SI		C		B	PT		O
Long-Bell Lbr. Co., Kansas City 6	MW		DH	C	YS	DT	SL	MF	SL	RL	GP	SW	SI	RG	BC	TL	BT	PT	AK	DS
NEW YORK																				
J. Herbert Bate Co., New York—See adv. p. 87	W		D		Y	DT	S			L										
OHIO	W		D		Y	DT	S			L										
Malcolm & Associates, Cleveland 15—See adv. p. 82	W		D		YS	DT					P		I					PT		O
OREGON																				
Jos. A. Adair Lbr. Co., Portland 4—See adv. p. 81	W		DH	SC	YS	DT		MF	S	RL	G		S	R	B				K	O
Air-King Mfg. Corp., Tigard	M		D		Y	DT														
Bradley Lbr. Co., Bradwood	M	22	H			DT								R			B			
Bridge Lbr. Co., Reedsport	M	22	D		Y	DT	S								C					
Carlton Mfg. Co., Carlton—See adv. p. 87	M	24	DH		Y	DT														
Carnation Lbr. Co., Forest Grove	M	36	D		Y	DT	SL							R	BC					
Al Clements Lbr. Co., Eugene—See adv. p. 72	MW		D		YS	DT	SL	MF	S				S	R	C					O
Cobbs & Mitchell Co., Portland 5	M	60	DH	C	YS	DT	SL	M				W	S	R		L	T			
Contact Lbr. Co., Portland 4	W		DH	SC	YS	DT	S	MF	SL	RL	P	FW	SI	RG			B		K	O
Coos Bay Logging Co., No. Bend	M	65	DH		Y	DT									B					
Dwyer Lumber Co., Portland 6	M	30	DH	C	YS	DT	SL	MF					S	R	BC	L	T			
Engle & Worth Lbr. Co., McMinnville	M	45	D	C		DT	SL						S	R	B	L	T		A	
Firpine Products Co., Portland	W		DH	SC	YS	DT	SL	MF				FW	SI	RG		L				
Fischer Lbr. Co., Marcola	M	30	D		YS	DT	SL	F					SI		C					
Fleishman Lbr. Co., Portland	MW		DH	SC	YS	DT	SL	MF	S				SI							O
Foster Mills, Inc., Willamina	M	23	DH		Y	DT	SL						SI	R	BC	T	T	P	A	
Gardiner Lbr. Co., Gardiner	M	93	D		Y	DT	SL							R	B					
Giustina Bros. Lbr. Co., Eugene	M	30	DH		YS		SL	F					S	R	BC	TL	T		A	
Griswold Lbr. Co., Portland 4—See adv. p. 87	MW	70	DH	C	YS	DT	S							R	C	T			A	
Hill-Behan Lumber Co., Eugene—See adv. p. 89	W		DH	SC	YS	DT		MF	S	R										
Edward Hines Lbr. Co., Westfir—See adv. p. 14	M	60	DH		YS	DT	SL							R	BC		T			O
Independence Lbr. & Mfg. Co., Independence—See adv. p. 87	M		D		Y	DT	S			L										
Jaymer Co., Hood River	M	27	DH	C	Y	DT	SL							R	C	TL	T	P		O
C. D. Johnson Lbr. Corp., Portland—See adv. p. 61	M	150	DH	S	YS	DT	SL	M	SL		G		SI	R	BC	TL	BT		A	P
Kingsley Lbr. Co., Portland 9	M	36	DH		YS	DT	L							R		L	T			
Knapp Lbr. Industries, Medford—See adv. p. 70	M	30	DH		Y	DT	S						S	R	C				K	
Lausmann Lbr. Co., Medford—See adv. p. 70	MW	30	DH		Y	DT	S						S	R	C				K	
L. H. L. Lumber Corp., Carlton—See adv. p. 88	M	60	D		Y	DT	SL							R			T			
Lorraine Valley Lbr. Co., Cottage Grove	M	40	D			DT	SL			L				R	C		T	P		
D. M. McClintock Lbr. Co., Portland 5	W		DH	SC	YS	DT		MF	S	R										
Medford Corp., Medford—See adv. p. 32	M	70	D		YS	DT	S	MF	SL				SI	R	C	L	T		K	
Mill City Mfg. Co., Portland	M	24	D		YS	DT	SL		S					R	C	L	T	P		
Morrill & Sturgeon Lbr. Co., Portland—See adv. p. 81	W		DH	SC	YS	DT	SL	MF	S	RL	G	SW	SI	R	BC	TL	T	P	AK	O
Multnomah Lbr. & Box Sales Co., Portland 1	M	30	D	S	YS	DT	S	F	S				S	R					A	N
New Grand Ronde Lbr. Co., Willamina	M	30	D		YS	DT	S						S	R	BC					

O—Other Woods N—Noble Fir DS—Doors & Screens P—Prefabricated Items

Douglas Fir, West Coast Hemlock, Sitka Spruce, Western Red Cedar

OREGON—Continued	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	D—Douglas Fir H—West Coast Hemlock	S—Sitka Spruce C—Western Red Cedar	Y—Yard Stock S—Shed Stock	D—Dimension T—Timbers	S—Select Structural Grades L—Long Timbers	M—Mouldings F—Flooring	S—Bevel Siding L—Log Cabin Siding	R—Red Cedar Shingles L—Lath	G—Gutter P—Plywood	S—Sash F—Frames W—Window & Door Stock	S—Shop Lumber I—Industrial Cut Stock	R—Rough Clears G—Glued-up Stock	B—Boat & Ship Lumber C—Car Material	T—Turning Squares L—Ladder Stock	B—Box Shook & Crating T—Tank, Pipe and Silo Stock	P—Poles, Piling T—Treated Stock	A—Airplane Stock K—Knotty Paneling	Other
O'Brien-Gram Spruce Co., Astoria	M	23		S					S			W	SI	R	B	TL	B		A	
Oregon-American Lbr. Corp., Vernonia—See adv. p. 44	M	100	DH		YS	DT	S	F	S				S	R	C					
Patrick Lbr. Co., Portland 5	W		DH	SC	YS	DT	SL	MF	SL	L	G	W	SI	R	BC	TL	BT	P	AK	PP
Portland Lbr. Mills, Portland 8	M	48	D		Y	DT	SL						S	R	BC		T			
Prouty Lbr. & Box Co., Warrenton	M	60	D		YS	DT	SL	MF	S		G		S	R	BC	T	T	P	A	
Rogue Lbr. Sales Co., P. O. Box 707, Medford	MW		DH	SC	YS	D		MF	S											
Rosboro Lbr. Co., Springfield—See adv. p. 16	M	50	DH	C	YS	DT	S	MF	SL		G		I	R	BC	L	T		A	O
Row River Lbr. Co., Portland 5	M	30	DH		Y	DT	SL						I	R	BC	L	T			
Santiam Lbr. Co., Div., Lebanon—See adv. p. 76	M	60	DH		Y	DT	S			L	P		I	R	BC		T			
Santiam Lbr. Co., Div., Sweet Home—See adv. p. 76	M	60	DH		YS	DT	SL	MF		L	P		SI	R	BC	L	T			
Shaw Lbr. Co., Yamhill	M	18	DH	C	Y	DT	S						S	R			T			
Edw. J. Sherman Lbr. Sales, Portland 4—See adv. p. 60	W		DH	SC	YS	D		MF	S				SI							O
Stimson Lbr. Co., Forest Grove—See adv. p. 84	M	45	D		YS	DT	S						S	R	C		T		A	O
Sullivan Lbr. Co., Portland	W		DH	SC	YS	DT	SL	MF	SL	RL			SI	R	BC	TL	T	PT		
Swede Basin Lbr. Co., Grants Pass	M	20	D		Y	DT	S		S				S	R	C					
Van Deinse Lbr. Sales Corp., Portland 5—See adv. p. 80	MW	25	DH	SC	YS	DT		MF	SL	RL	P	FW	S	R	C	L	T			O
Wauna Lbr. Co., Wauna	M	60	D		YS	DT	SL	MF			G		SI	R	BC	T	T	T	A	
West Oregon Lbr. Co., Portland 9	M	50	DH			D												T		
Willamette Valley Lbr. Co., Dallas	M	100	DH	C	YS	DT	SL	MF	S	R	G		SI	R	BC	TL	T	P	A	N
A. K. Wilson Lbr. Co., Portland 4	MW	100	DH	S	YS	DT	SL	MF			P			R	BC	T	T		A	
W. A. Woodard Lbr. Co., Cottage Grove	M	37	DH	C	YS	DT	S	MF				W	SI	R	C	TL	BT		A	X
WASHINGTON																				
Canyon Lbr. Co., Everett	M	36	H		YS	DT	S		SL			W	SI	R	C	T	B			
Colonial Cedar Co., Seattle—See adv. p. 355	M									R										CS
Columbia River Paper Mills, Vancouver	M	50	DH		YS	DT										L				
Davis Sales Agency, Mercer Island	W		DH	SC	YS	DT	S		S	R			S							
Defiance Lbr. Co., Tacoma	M	65	D		YS	DT	SL			L			S	R	BC	L			A	
Dubois Lbr. Co., Vancouver	M	15	D		Y	DT	SL								C					
Duncan Lbr. Co., Seattle 11—See adv. p. 81	W		DH	SC	YS	DT	SL	MF	S	R				R						
Eclipse Lbr. Co., Inc., Everett	M	55	DH	C	YS	DT	S	MF					SI	R	BC	L	T			
Gram Mfg. Co., Vancouver			DH	S				M	S				SI	R		L				
Gray Lbr. & Shingle Co., Seattle	MW	15	DH	SC	YS	DT	SL	MF	S	R				R	BC	L	T	P		
Robt. Gray Shingle Co., Hoquiam	M		DH	SC	YS	D		MF		R										
Grays Harbor Lbr. Co., Hoquiam	M	75	DH		S	DT	SL					W	S	R	BC	T	T		A	
Heidner & Co., Tacoma 1—See adv. p. 83	W		DH	SC	YS	DT	SL	MF	S		P		I		BC	TL	BT			
Wm. Hulbert Mill Co., Everett	M	33		C	YS			M	SL	R	G			R	B	T				Z
International Timber Products, Inc., Seattle 1	W		DH	SC	YS	D	S	MF	S				S	R						
Karlen-Davis Co., Tacoma 1—See adv. p. 18	MW	50	DH	SC	YS	DT	S	F	S				I	G	BC					
J. G. Kennedy Lbr. Co., Seattle	W		D	SC	YS	D	SL	MF	S		P		SI						K	
Klement Timber Co., Fortson	MW	15	DH	C	YS	DT	SL	F					S		BC	T				1
Long-Bell Lumber Co., Longview	MW	500	DH	C	YS	DT	SL	MF	SL	RL	GP	SW	SI	RG	BC	TL	T	PT	A	2
E. C. Miller Cedar Lbr. Co., Aberdeen	M	15		C	YS	DT		MF	SL	RL	G		S				T		K	
Mauk Seattle Lbr. Co., Seattle 1—See adv. p. 81	MW		DH	SC	YS	DT	SL	MF	SL	RL	P	SW	SI	R	BC	TL	BT		K	O
Morrison Mill Co., Anacortes	M		DH	SC	YS	DT	SL	F					SI	R		TL	B		AK	
Nettleton Timber Co., Seattle 14	M	50	DH	C	YS	DT	S	F		L	G				BC	L	T			□
North Plywood, Inc., Seattle	W		DH	SC	YS	DT					P		SI							
Pacific National Sales Co., Tacoma—See adv. pp. 75-81	W		DH	SC	YS	DT	SL	MF	S		GP	SF	SI	R	BC	TL	BT			OW

N—Noble Fir
PP—Ponderosa Pine
W—Window and Door Stock
1—Soft Maple A.D. Dim. & Const. Bds.
□—Prefabrication and Processing
Z—Glued-Up Dimension, Linderman Stock
2—Frames, Doors & Screens
O—Other Woods
CS—Cedar Shakes and Stained Shingles.
X—Kiln Dried Fir Plank and Small Timbers, No. 3 to Sel. Structural

Douglas Fir, West Coast Hemlock, Sitka Spruce, Western Red Cedar

	M—Manufacturer W—Wholesaler	Annual Capacity Million Feet	D—Douglas Fir H—West Coast Hemlock	S—Sitka Spruce C—Western Red Cedar	Y—Yard Stock S—Shed Stock	D—Dimension T—Timbers	S—Select Structural Grades L—Long Timbers	M—Mouldings F—Flooring	S—Bevel Siding L—Log Cabin Siding	R—Red Cedar Shingles L—Lath	G—Gutter P—Plywood	S—Sash F—Frames W—Window & Door Stock	S—Shop Lumber I—Industrial Cut Stock	R—Rough Clears G—Glued-up Stock	B—Boat & Ship Lumber C—Car Material	T—Turning Squares L—Ladder Stock	B—Box Shook & Crating T—Tank, Pipe and Silo Stock	P—Poles, Piling T—Treated Stock	A—Airplane Stock K—Knotty Paneling	O—Other
WASHINGTON—Continued																				
Polson Lbr. & Shingle Mills, Hoquiam	M	75	DH	S	YS	DT	S						S	R	C	L	BT		A	
Robinson Mfg. Co., Everett	M	75	D		YS	DT	S	M			GP	SW	SI	R	BC	TL	T		A	★
St. Paul & Tacoma Lbr. Co., Tacoma 2	M	100	DH	C	YS	DT	S	MF	SL	L	GP		I		BC		T			
Seattle Cedar Lbr. Mfg. Co., Seattle 7	M	45		C	YS			M	S	R				R	B		T		K	
Simpson Logging Co., Seattle 1	M	80	DH		YS	DT	S				P			R	C					★
Stimson Mill Co., Seattle 7—See adv. p. 84	MW	50	DH	C	YS	DT	S	F		L			S							
Tacoma Export Lbr. Co., Tacoma 1	M	30	D	C	Y	DT	S							R	B					
Twin Harbors Lbr. Co., Aberdeen—See adv. p. 35	MW		DH	SC	YS	DT	SL	M	S	RL			SI		BC		T			O
Walton Lbr. Co., Everett	M	45	DH	SC	YS	DT	S	MF	SL		GP	W	SI	R	BC	L	T		A	N
Washington Mfg. Co., Tacoma	M		D					M			G	F		G						U
Washington Veneer Co., Olympia	M	30	DH	C	Y	DT	S			L	P		S	R	B	T				
West Waterway Lbr. Co., Seattle 14	M	30	DH	SC		DT														
Weyerhaeuser Sales Co., (See St. Paul, Minn.)																				
Wheeler, Osgood Co., The, Tacoma 1—See adv. p. 141	M		D								P									¶
White River Lbr. Co., Enumclaw	M		DH		YS	DT	S	M	S				I	R	C	L	T			
White Star Lbr. Co., Whites	M	37	DH		YS	DT	SL	M		R	G	W	S		BC	TL	T	P	A	
Willapa Harbor Lbr. Mills, Raymond	M	100	DH	SC	YS	DT	S	MF	S		G	W	S	R	BC		T		A	
WISCONSIN																				
Metropolitan Lbr. Co., Milwaukee	W		DH	SC	YS	DT		MF												
BRITISH COLUMBIA																				
British Columbia Forest Prods. Ltd., Hammond	M	40		C	S			MF	S	R										
Canadian Forest Products, Ltd., Vancouver	M	120	DH	C	YS	DT	SL	MF	SL	R	P		SI	R	BC	L				
Canadian Western Lbr. Co., Ltd., Frazer Mills	M	200	DH	SC	YS	DT	SL	MF	SL	RL	GP	W	S	R	BC	L	T		K	★O
Goodwin Johnson, Ltd., Vancouver—See adv. p. 88	MW		DH	C	Y													P		
Northern Wood Products, Vancouver—See adv. p. 88				C	Y	D			S											
Robertson & Hackett Sawmill Co., Vancouver	M	35	DH	C	YS	DT	SL	MF	SL	R		W	SI	R	C	L			K	
Thurston Lbr. Co., Vancouver—See adv. p. 78	M		DH	SC	YS	DT	S	MF	S	R										
Thurston-Flavelle Ltd., Port Moody—See adv. p. 80	M	30		C					S	RL										
The David Wilson Lbr. Co., Lac la Hache—See adv. p. 70	M		D	C	YS	D		MF	S											

O—Other Softwoods
Z—Glued-up Dimension, Linderman Stock

U—Cl. Fir Finish, Porch, Stairs, Hand Rails; Built-Up Columns

X—Doors, Sash, Special Woodwork
N—Noble Fir

★—Doors, Windows, Sash
¶—Complete Line House & Garage Doors

Hardwood Flooring and Other Items

	Oak	Maple	Beech	Birch	Gum	Pecan	Strip	Plank	Herringbone	Block	Factory Finished	Treated Flg. & Lumber	Pine Lumber	So. Hardwoods	Appal. Hardwoods	North. Hardwoods	Hardwood Trim	Cypress Trim	Pine Trim	Pine Flooring
Anderson-Tully Co., Memphis, Tenn.	X		X			X	X	X					X	X						X
Arkansas Oak Flooring Co., Pine Bluff, Ark.	X		X			X	X	X	X					X			X			
Atlanta Oak Flooring Co., Atlanta, Ga.	X	X	X	X			X	X				X		X	X	X	X	X	X	
Babcock Lbr. Co., Pittsburgh 19	X	X	X	X			X				X		X	X	X	X			X	X
P. M. Barger Lbr. Co., Statesville, N. C.	X	X	X	X	X		X			X	X		X	X	X	X	X	X	X	X
Barnes Lbr. Corp., Charlottesville, Va.	X				X		X		X					X			X	X	X	X
Blount Lbr. Co., Lacona, N. Y.		X	X	X			X													

Hardwood Flooring and Other Items

	Oak	Maple	Beech	Birch	Gum	Pecan	Strip	Plank	Herringbone	Block	Factory Finished	Treated Flg. & Lumber	Pine Lumber	So. Hardwoods	Appal. Hardwoods	North. Hardwoods	Hardwood Trim	Cypress Trim	Pine Trim	Pine Flooring
Boydton Mfg. Co., Boydton, Va.	X						X													
Bradley Lbr. Co., Warren, Ark.—See adv. p. 48	X		X			X	X	X		X	X		X	X			X	X	X	X
E. L. Bruce Co., Memphis, Tenn.—See adv. p. 307	X		X			X	X	X		X	X	X	X	X			X		X	X
Carr Lbr. Co., Pisgah Forest, N. C.	X	X					X								X					
Central Oak Products Co., Nashville, Tenn.	X	X	X				X	X						X	X					
Charleston Lbr. Co., Charleston, W. Va.	X						X													
Clarke County Lbr. Mills, Thomasville, Ala.	X	X	X	X	X	X	X				X		X	X		X	X		X	X
Cloud Oak Flooring Co., Springfield, Mo.—See adv. p. 320	X						X						X	X						
Colonial Hardwood Flooring Co., Hagerstown, Md.	X	X	X				X		X				X		X		X		X	X
Connor Lbr. and Land Co., Marshfield, Wis.—See adv. p. 302	X	X		X			X					X	X			X				
A. B. Cook Co., Malvern, Ark.	X				X		X						X	X			X	X		
F. C. Cook & Co., Baltimore, Md.	X	X					X		X						X					
Cotton & Hanlon, Odessa, N.Y.	X	X	X	X	X		X	X					X	X	X	X			X	X
Crossett Lbr. Co., Crossett, Ark.	X						X					X	X	X					X	X
Dailey Flooring Corp., Dailey, W. Va.	X	X	X	X			X													
De Soto Hardwood Flooring Co., Memphis, Tenn.	X						X	X						X			X			
Dierks Lbr. & Coal Co., Kansas City 6, Mo.—See adv. p. 322	X						X						X	X			X		X	X
Emporium Forestry Co., Conifer, N. Y.		X	X	X			X						X			X				X
Evans Hardwood Flooring Co., St. Louis, Mo.	X	X	X				X	X	X	X										
Exchange Sawmills Sales Co., Kansas City 6, Mo.	X						X						X	X					X	X
D. L. Fair Lbr. Co., Louisville, Miss.—See adv. p. 310	X		X		X	X	X						X	X			X		X	X
M. B. Farrin Lbr. Co., Cincinnati, O.—See adv. p. 67	X	X	X	X	X		X	X	X	X	X	X			X					
W. T. Ferguson Lbr. Co., St. Louis 1, Mo.—See adv. p. 87	X	X			X		X				X	X	X	X					X	X
Fordyce Lbr. Co., Fordyce, Ark.—See adv. p. 313	X		X			X	X					X	X	X			X	X	X	X
Frost Hardwood Floors, Inc., Shreveport, La.	X		X		X	X	X	X				X	X	X			X		X	X
Frost Lbr. Industries Inc., Shreveport, La.	X		X		X	X	X	X				X	X	X			X	X	X	X
Georgia-Pacific Plywd. & Lbr. Co., Augusta, Ga.—See pp. 40-41	X	X	X	X	X	X	X	X		X	X	X	X	X	X			X	X	X
Hallett Mfg. Co., Mobile 2, Ala.	X				X	X	★						X	X			X	X	X	X
Harris Mfg. Co., Johnson City, Tenn.	X	X	X				X	X	X	X										
Higgins, Inc., New Orleans, La.—See adv. p. 317	X				X					X	X									
Holt Hardwood Co., Oconto, Wisc.—See adv. p. 322	X	X	X	X			X	X	X	X		X				X				
Hurtsboro Oak Flg. Co., Inc., Hurtsboro, Ala.—See p. 83	X						X						X	X						
Industrial Lbr. Co., Little Rock, Ark.—See adv. p. 320	X					X	X	X						X			X			
Kirby Lbr. Corp., Houston 1, Tex.—See adv. p. 78	X						X						X	X					X	X
A. H. Leathers Mfg. Co., Dickson, Tenn.	X		X				X													
Lightsey Bros., Miley, So. Car.—See adv. p. 66	X	X			X		X						X	X					X	X
Long-Bell Lbr. Co., Kansas City 6, Mo.	X						X	X					X	X			X		X	X
Marsh Lbr. Co., Dover, Ohio	X	X	X				X	X								X	X		X	
McMinnville Mfg. Co., McMinnville, Tenn.	X	X	X				X	X							X		X			
Meadow River Lbr. Co., Rainelle, W. Va.—See adv. pp. 67, 89	X	X	X	X		X	X	X	X						X		X			
Memphis Hardwood Flooring Co., Memphis, Tenn.	X		X			X	X	X	X		X			X			X			
Merit Oak Flooring Co., Birmingham 1, Ala.	X		X				X													
Miller & Co., Inc., Selma, Ala.—See adv. p. 305	X		X			X							X	X						X
Miller Bros. Co., Johnson City, Tenn.	X	X	X	X			X	X		X					X		X			
Missouri Floor Co., St. Louis, Mo.	X	X					X													
Mobile River Saw Mill Co., Mt. Vernon, Ala.	X						X								X					
Monterey Hardwood Flooring Co., Monterey, Tenn.	X	X	X				X													
Mower Lbr. Co., Charleston, W. Va.—See adv. pp. 67, 74	X	X	X	X			X						X		X		X			
Nickey Bros., Inc., Memphis, Tenn.	X		X	X		X	X	X		X				X	X	X	X	X		

★—Plain End

Hardwood Flooring and Other Items

	Oak	Maple	Beech	Birch	Gum	Pecan	Strip	Plank	Herringbone	Block	Factory Finished	Treated Flg. & Lumber	Pine Lumber	So. Hardwoods	Appal. Hardwoods	North. Hardwoods	Hardwood Trim	Cypress Trim	Pine Trim	Pine Flooring
North Branch Flooring Co., Chicago	X	X					X								X	X	X			
R. C. Owen Co., Hopkinsville, Ky.	X	X	X		X	X	X	X						X			X			
Ozark Oak Flooring Co., Bismarck, Mo.—See adv. p. 321	X						X													
Parnell Lbr. Co., Pine Hill, Ala.	X		X				X													
Frank Paxton Lbr. Co., Kansas City, Kans.		X	X	X			X	X		X	X			X	X	X				
Phillips-Rhyne Lbr. Co., Brookhaven, Miss.	X	X	X	X		X		X			X		X	X			X			X
Robbins Flooring Co., Reed City, Mich.—See adv. p. 319	X	X	X	X			X		•	X										
D. M. Rose & Co., Knoxville 4, Tenn.	X	X	X				X	X							X		X			
Wm. C. Schreiber Lbr. Co., Chicago 16, Ill.	X	X		X			X						X	X	X	X				
Scotch Lbr. Co., Fulton, Ala.—See adv. p. 77	X						X						X	X					X	X
Scottdale Wood Products, Inc., Scottdale, Pa.	X	X					X	X							X					
Geo. J. Silbernagel, 8 So. Michigan, Chicago 3—See adv. p. 31	X	X	X	X			X						X	X					X	X
Southern Lbr. Co., Warren, Ark.	X		X				X						X	X					X	X
Southern Pine Lbr. Co., Texarkana, Tex.	X		X			X	X						X	X			X	X	X	X
E. A. Stewart Lbr. Co., Texarkana, Tex.	X						X							X						
Stowers Lbr. & Mfg. Co., Harriman, Tenn.	X						X													
Stuart Lbr. Corp., Stuart 10, Va.	X	X	X				X	X		X	X				X		X			
Texoak Flooring Co., Crockett, Texas—See adv. p. 309	X		X		X	X	X		X	X							X			
Virginia Oak Flooring Co., Pulaski, Va.	X	X	X	X			X	X	X	X			X[1]		X		X			
H. E. Webster Lbr. Co., Kansas City 6, Mo.	X	X	X				X						X	X						
J. W. Wells Lbr. Co., Menominee, Mich.		X	X	X			X													
Williams & Voris Lbr. Co., Chattanooga, Tenn.	X	X	X				X							X	X					
Wood-Mosaic Co., Inc., Louisville 9, Ky.—See adv. p. 67	X	X	X	X			X	X			X			X	X					

*—Parquet

1—White Pine Only

ADVERTISING

PAYABLE IN ADVANCE

HELP WANTED

Wanted: Lumber grader for Distributing Yard on Hardwoods and White Pine. Steady work, union scale. Address E-42, American Lumberman.

Wanted: Either male or female stenographer and clerk capable of dictaphone transcribing. Apply in own handwriting stating age, schooling, experience, references and salary expected. The Connor Lumber and Land Company, Wakefield, Michigan.

HELP WANTED

WANTED: Man with sufficient retail lumber experience and ability to be Division Superintendent for Line Yard Company. Address Box L-47, American Lumberman, Inc.

WOODWORK PRODUCTION MAN

Plant produces highest type woodwork for top contractors and architects—local, national and export markets. Applicant must be experienced in quality construction methods, layouts, shop details and know how to get results from mechanics. The man who qualifies gets a life-time job with well-established firm. Salary—profit-sharing—life and disability insurance. Write detailed qualifications to Box L-27, American Lumberman, Inc.

WANTED: Man who is good at figuring lumber to work in General Office of Line Yard Lumber Company. Address Box L-51, American Lumberman, Inc.

Building Material Salesman wanted for the State of Florida.

We have an opening for a live-wire salesman between the ages of 25 and 40 years who has had experience in selling Sash and Doors, Yellow Pine and Pacific Coast Lumber. This is a good opening for a salesman who will get out and work the Trade as he should. We are willing to furnish a car and pay reasonable salary and commission to a man who can deliver. Will have to furnish bond and stand physical examination. Address L-22, American Lumberman, Inc.

WANTED: Northern Lumber and Flooring salesman in Wisconsin or lower Michigan. Address K-29, American Lumberman, Inc.

WANTED: Man with experience and ability in buying lumber and building materials for a good position with retail lumber company. Address Box L-49, American Lumberman, Inc.

HELP WANTED

WANTED: Experienced Retail Lumberman to manage or assist management—Northern Indiana City yard doing $225,000.00 volume. We are looking for a capable man who can develop sales, knows costs, willing to start at a fair salary with bonus in line with results. References required. Write full particulars in first letter. Address Box K-40, American Lumberman, Inc.

SUPERINTENDENT WANTED

Experienced in detailing and billing. Sash and Door Plant in St. Louis. State age, experience, salary and references. Address Box K-42, American Lumberman, Inc.

Sales representative with excellent, long-standing contacts among home builders and contractors, to represent a leading, long established manufacturer of wood kitchen cabinets. Prefer highly successful man capable of large earnings with us. May continue to carry non-competing lines such as building materials or builder's hardware. State length experience in present territory. We assure strict confidence in negotiations. Address Box L-25, American Lumberman, Inc.

ESTIMATOR—SALESMAN—DETAILER

Opportunity with woodwork manufacturing plant catering to top contractors and architects—local, national and export. Must be experienced enough to require no training, except in company methods and policies. Young enough to have flexible approach to problems and grow with well-established firm. Salary—profit-sharing—life and disability insurance. Write full qualifications to Box L-26, American Lumberman, Inc.

WANTED: Manager for good retail lumber yard and building material store. Address Box L-50, American Lumberman, Inc.

HELP WANTED

Wanted: Experienced Sash and Door Salesman —Central and Southern Illinois area. State age, experience and references. Address Box K-41, American Lumberman, Inc.

Detailer and Biller of Architectural Millwork. Must be thoroughly experienced in taking measurements, making shop drawings and billing into mill. Please state experience, age and references. Excellent working conditions, steady employment and good salary to the right man. Address Box K-51, American Lumberman, Inc.

WANTED: Man who has been manager of a small yard or assistant manager of a large one, who now would like to advance to manager of a good retail lumber yard. Address Box L-49, American Lumberman, Inc.

Millwork office man wanted. Must have some practical experience as draftsman. Must be under 40 years of age, neat appearance, able to meet the public and assume responsibility. We desire a man with background to train as future executive in small detail mill and lumber company located in Southern California. Only applicants who give necessary information regarding background will be considered. Apply Box J-45 American Lumberman, Inc.

Hardwood salesman needed. Must have experience. Working conditions good. Best business section in the southwest. Give references, salary desired and experience. Address replies to Box J-44 American Lumberman, Inc.

Experienced man for Surveying and Estimating Millwork on Industrial, Commercial, and School Jobs. ALBERT B. LOWRIE LUMBER CO., 14541 Michigan Ave., Dearborn, Michigan.

Wanted: A sash and door salesman for Central and Southern Illinois. One who is familiar with millwork. Carr & Johnston Co., Peoria 2, Illinois.

MANUFACTURERS' AGENTS—to sell a complete line of step ladders, extension ladders, painters ladders, step stools and other woodenware to mill supply jobbers, lumber and building supply dealers, large paint and hardware retailers, and department stores. Full protection in territory assigned. State other lines now carried and exact territory covered. Address Box L-34, American Lumberman, Inc.

WANTED: Experienced estimator for retail lumber, millwork and mason supply business. Must be congenial and pleasant to retail trade. Steady employment and excellent opportunity for right party. State age, experience and salary in first letter. Address Box L-36, American Lumberman, Inc.

Masonry and Lumber Products Department Managers

Long established retail dealer in Indiana offers opportunity in expanding by dividing present operations. Men to head these two departments must be qualified and experienced to both manage and sell. Compensation to be salary plus bonus. Give details of experience, education, salary and personal qualities. Address Box K-20, American Lumberman, Inc.

WANTED: Experienced yard man for retail lumber, building supplies and coal. State qualifications, references, salary expected and age. Address Box L-37, American Lumberman, Inc.

Roofing & Application Department Manager

Long established and well known retail dealer in Indiana offers opportunity to qualified man to head this department. Must have selling experience in this field. Compensation salary plus bonus. Give details of experience and any special training and personal qualifications. Applications handled confidentially. Address Box K-32, American Lumberman, Inc.

WANTED: Salesman for Indiana Territory by old established manufacturer of Hardwood Flooring and Planing Mill Products. A resident of Indiana or one willing to locate in Indianapolis preferable. Address Box L-44, American Lumberman, Inc.

HELP WANTED

Assistant Sales Manager

We are looking for an aggressive Hardwood Flooring and Lumber Salesman with successful background in the Central, Eastern and Northeastern territories. Plant located northern Appalachian district.

Man selected will succeed present sales manager on his retirement on salary and bonus basis.

Applicant should cover previous experience, age, schooling and marital status in first letter.

All replies confidential.

Address Box L-42, American Lumberman, Inc.

WANTED

Young man for sales manager, experience necessary, for small pine and hardwood shipper, production own mill about three quarters million, with ample cash to operate wholesale department. Must be energetic, sober and industrious. Reply giving past experience, employer, and if have had pine and hardwood experience. Starting salary reasonable with prospects to share profits later. Mississippi town, good schools and churches. Reply confidential. Address Box L-41, American Lumberman, Inc.

SITUATIONS WANTED

Experienced millwork executive desires position as manager of Mfg. or jobbing business. Write F-34, American Lumberman, Inc.

SPRUCE—PINE—HEMLOCK BUYER

Canadian, 25 years' experience, mill connection throughout Ontario — Quebec and Maritime Provinces, seeks position as buyer, commission basis. Highest references. Write: Meyers Allard, 2900 Paul Pau St., Tetreaultville, Pro. Quebec.

Age 44. Twenty seven years experience, thirteen as manager in retail lumber yards. Would like to manage yard in Oklahoma, Arkansas or Texas. Prefer city of 25M or more. Address Box L-23, American Lumberman, Inc.

Young man desires change of employment. Age 31. Married. Experienced in architectural drafting, construction estimating and general lumber yard office work. Willing and ambitious. Particularly interested in advancement opportunities. Write Box L-28, American Lumberman, Inc.

Married man, 35, 13 years experience, desires position as manager or assistant manager retail lumber company. Employed at present. Address Box L-29, American Lumberman, Inc.

Over 30 years retail experience in lumber, millwork and hard materials. All with one organization. Thoroughly understand handling yard labor, credits, accounting, office and yard details, also requirements of contractors and counter trade sales. Prefer management of sizable yard and qualified for lineyard assignment as Merchandise, Credit, Efficiency Supervisor and when occasion demands to act as a relief manager.
Aggressive. Excellent health. Marital status —wife—children married and independent.
Address Box L-38, American Lumberman, Inc.

Lumber Salesman

With excellent following among dealers and industrial users of lumber, cut stock and shooks in Eastern and Central New York State and Southwestern New England desires a new connection. Confident that he is in position to substantially increase your sales. Address Box L-33, American Lumberman, Inc.

A LUMBERMAN'S LUMBERMAN

is looking for an employer of decision, who knows what he wants now. 39 years plus, free to travel. 24 years of varied services, assistant to the owner, advertising, bookkeeping, cashier, credits, purchasing and yard handling in retail lumber business. Hard working, efficient and personable, who can use his head and see that orders are carried thru. Please write fully; Box L-32, American Lumberman, Inc.

HARDWOOD LUMBERMAN

30 years diversified office experience. Middle age, married. Address L-30, American Lumberman, Inc.

SITUATIONS WANTED

Prefer management of sizable yard. Qualified for lineyard assignment as Merchandise, Credit, Efficiency Supervisor and can act as relief manager.

Over 30 years retail experience in lumber, millwork and hard materials. All with one organization. Thoroughly understand handling yard labor, credits, office and yard details, also requirements of contractors and counter trade sales.

Excellent health—aggressive. Will locate anywhere but prefer Northern California, Oregon or Washington. Marital status—wife. Children married and independent.
Address Box L-39, American Lumberman, Inc.

Experienced retail lumberman, twenty five years manager country yard, including grain. Consider manager position. Preferably Midwest. Address L-43, American Lumberman, Inc.

WANTED TO BUY — MISCELLANEOUS

RAILS WANTED
Any weight—Any tonnage
W. H. DYER CO., INC.
Railway Exchange Bldg., St. Louis 1, Mo.

RAILS: ANY SIZE OR QUANTITY
Particularly 20 lb. 25 lb. 30 lb. 35 lb. & 40 lb.
Secure our price before selling.
MIDWEST STEEL CORP.
Charleston, W. Va.

MILLING IN TRANSIT

We do dressing, resawing and kiln drying in transit.
Grayson Lumber Co., Inc., Birmingham, Ala.

BUSINESS OPPORTUNITIES

Distributors wanted. Completely different home plan book. Easily sold on unique basis attractive to lumber and building material dealers. Saves them time and money. Promotes new business. For details write Harmonious Homes, 5762 West Pico Blvd., Los Angeles 35, California.

BUILDING SUPPLY Business and Coldstorage plant. Could not be replaced for $200,000. Must sacrifice for $60,000 including 2 fine homes. Illness forces sale. GLICK & ROSTAN, Clayton, N. J.

LUMBER-BUILDERS SUPPLIES, WESTERN PA. Small city; sales $20,000 month; also plumbing, heating franchise; many known items; two buildings 35x80 and 50x75; fully equipped; large lot; no competition; $60,000 stock; established clientele; fine for partners; with property; price reasonable.
APPLE COMPANY, BROKERS
CLEVELAND, OHIO

SWEDISH

wood formsetting plate for concrete foundations. In a short time, 20,000,000 square feet have been manufactured by fifteen manufacturers in nine countries in Europe. Manufacture and sale of same now for U.S.A. or parts thereof. Suitable for large lumber concerns. Construction very simple and with their own saw mills, a good profit possible. Inventor now in U.S.A. to organize same for manufacturing on royalty basis. This plate has great possibilities. Contact desired direct with lumber concerns. Address Box H-63, American Lumberman, Inc.

BUSINESSES WANTED

WANTED—TO BUY

Retail Lumber and Building Material Business in town ranging approximately from 35,000 to 125,000. Write giving particulars to Box L-24, American Lumberman, Inc.

LUMBER & DIMENSION WANTED

Wanted any quantity cheap grades and rough lumber, any sizes, reasonable prices at your mill. Address Box L-45, American Lumberman, Inc.

Wanted: Plywood shorts cut to size, some required painted. CHRIS-WOOD PRODUCTS CO., KINGSVILLE, OHIO.